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RELATIONSHIPS BETWEEN PARENTAL ACCEPTANCE-  
REJECTION, FAMILY FUNCTIONING AND  
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TIANNA HOPPE-ROONEY

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Mareka T. Carrigan, Ph.D.  
Major Professor's Signature

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**RELATIONSHIPS BETWEEN PARENTAL ACCEPTANCE-REJECTION,  
FAMILY FUNCTIONING AND DISORDERED EATING IN  
COLLEGE-AGED FEMALES**

**By**

**Tianna Hoppe-Rooney**

**A DISSERTATION**

**Submitted to  
Michigan State University  
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**DOCTOR OF PHILOSOPHY**

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**2004**



## **ABSTRACT**

# **RELATIONSHIPS BETWEEN PARENTAL ACCEPTANCE-REJECTION, FAMILY FUNCTIONING, AND DISORDERED EATING IN COLLEGE-AGED FEMALES**

**By**

**Tianna Hoppe-Rooney**

The purpose of this study was to better understand the relationships between parental acceptance-rejection, family functioning, and disordered eating. Specifically the study set out to address the research question: Are parental acceptance-rejection and family functioning each related to disordered eating symptomatology? Variables examined in the study include maternal and paternal acceptance-rejection, and family functioning as independent variables and eating attitudes and behaviors as the dependent variable. Purposive sampling on a large university campus achieved a sample of 834 female participants between the ages of 18 and 25 years, enrolled as undergraduates.

In comparing the disordered eating and non-disordered eating groups in the study as differentiated by the EAT-26, it was found that statistically significant differences exist between the two groups on the measures of parental acceptance-rejection and family functioning. The disordered eating group reported greater levels of maternal rejection, paternal rejection, and unhealthy family functioning as compared to the non-disordered eating group.

The variables with the greatest impact on the dependent variable of disordered eating included maternal acceptance-rejection, family problem solving, and family behavior control.

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Although I have never considered myself a runner, an analogy of a race comes to mind when reflecting on my graduate work. Many people in my life have helped to train me for the sprint as well as keep me going when the race seemed too difficult to finish. My crossing the finish line could not have been achieved without the constant attention, support, and encouragement from my husband and biggest supporter, Todd. You picked me up when my mind was tired and nourished me in ways that meant so much to me along the intense journey. You believed, more than I at times, that I could succeed at running this race. Thank you.

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## TABLE OF CONTENTS

LIST OF TABLES.....	vii-viii
---------------------	----------

LIST OF FIGURES.....	ix
----------------------	----

### CHAPTER 1

#### INTRODUCTION

Statement of the Problem.....	1
Purpose of the Study.....	2
Theoretical Frameworks.....	3
Human Ecological Theory.....	4
Symbolic Interactionism.....	10
Theoretical Map.....	15
Research Questions.....	16
Hypotheses.....	17
Conceptual Model.....	18
Methodology.....	19
Overview of the Dissertation.....	19

### CHAPTER 2

#### REVIEW OF LITERATURE

Introduction.....	20
Disordered Eating and Familial Environment.....	20
Early Family Typologies.....	20
Content versus Process Driven Research.....	21
Perceived Family Functioning and Environment in Eating Disordered Families.....	24
Parental Influences.....	29
Construct of Rejection.....	33
Parental Acceptance-Rejection Framework.....	36
Supporting PARTheory.....	40

### CHAPTER 3

#### METHODOLOGY

Introduction.....	45
Research Questions and Hypotheses.....	46
Conceptual Model.....	48
Conceptual and Operational Definitions.....	48
Sampling Procedure.....	50
Variables.....	52
Instrumentation.....	54
Data Collection.....	62
Data Analysis.....	64

## TABLE OF CONTENTS (cont'd)

### CHAPTER 4

#### RESULTS

Introduction.....	66
Data Collection and Sample Recruitment.....	66
Demographic Sample Characteristics .....	68
Variable Distributions across the Sample.....	70
Hypotheses.....	79
Hypothesis 1.....	80
Hypothesis 2.....	83
Hypotheses 3 and 4.....	84
Hypothesis 5.....	100

### CHAPTER 5

#### DISCUSSION

Introduction.....	102
Overview of Findings.....	103
Conceptual Models.....	104
Original Conceptual Model.....	104
Revised Conceptual Model.....	105
Evaluation of Research Questions.....	106
Research Question 1.....	106
Research Question 2.....	107
Research Question 3.....	108
Research Question 4.....	110
Research Question 5.....	113
Limitations.....	116
Sample.....	116
Self Report Measures.....	117
Sequencing of the Questionnaires.....	118
Undifferentiated Eating Disorder Symptomatology.....	119
Clinical Implications.....	120
Treatment on the College Campus.....	120
Treatment within the Family.....	123
Future Directions.....	126

#### APPENDICES

APPENDIX A: Informed Consent.....	130
APPENDIX B: Demographic Questionnaire.....	131
APPENDIX C: Eating Attitudes Test (EAT-26).....	133
APPENDIX D: Parental Acceptance-Rejection Questionnaire- Mother.....	134
APPENDIX E: Parental Acceptance-Rejection Questionnaire- Father.....	139
APPENDIX F: Family Assessment Device (FAD).....	144

REFERENCES.....	149
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## LIST OF TABLES

Table 1: Abbreviated Model - Variables and Corresponding Instruments.....	61
Table 2: Expanded Model - Variables and corresponding Instruments.....	62
Table 3: Research Question with Corresponding Hypothesis and Data Analysis....	64
Table 4: Summary Demographic Characteristics of Sample.....	70
Table 5: Frequency Data for the FAD General Functioning Scale.....	73
Table 6: Maternal Parental Acceptance-Rejection Data: Raw and Z-scores.....	75
Table 7: Paternal Parental Acceptance-Rejection Data: Raw and Z-scores.....	77
Table 8: Group Statistics for PAR Variables included in T-tests.....	82
Table 9: Homogeneity of Variance and T-test Analyses for PAR Variables.....	82
Table 10: Group Statistics for Family Functioning Variable included in T-test.....	83
Table 11: Homogeneity of Variance and T-test Analyses for Family Functioning...	83
Table 12: Correlation Data for the 3 Primary Independent Variables.....	85
Table 13: Summary of Regression Analysis using the Enter Method for the Study's Abbreviated Model Predicting Eating Attitudes and Behaviors.....	90
Table 14: Summary of ANOVA for Study's Abbreviated Model using Enter Method.....	90
Table 15: Summary of Regression Analysis using the Step-wise Method for the Study's Abbreviated Model Predicting Eating Attitudes and Behaviors...	92
Table 16: Summary of ANOVA for Abbreviated Model using Step-wise Method..	92
Table 17: Correlation Matrix for Study's Independent Variables.....	95
Table 18: Summary of Regression Analysis using the Enter Method for the Study's Expanded Model Predicting Eating Attitudes and Behaviors.....	97
Table 19: Summary of ANOVA for Study's Expanded Model using Enter Method.....	98

## LIST OF TABLES (cont'd)

Table 20: Summary of Regression Analysis for the Study's Follow-up Model.....	98
Table 21: Summary of ANOVA for Study's Follow-up Model using Enter Method.....	98
Table 22: Frequencies for Specific EAT-26 Questions.....	122

## LIST OF FIGURES

Figure 1: Theoretical Map.....	16
Figure 2: Conceptual Model.....	18, 48, 104
Figure 3: Distribution of EAT-26 Composite Scores.....	71
Figure 4: Distribution of FAD General Functioning Scores.....	74
Figure 5: Histogram for Raw Composite of MPARQ.....	76
Figure 6: Histogram for Z-score Composite of MPARQ.....	76
Figure 7: Histogram for Raw Composite of FPARQ.....	78
Figure 8: Histogram for Z-score Composite of FPARQ.....	79
Figure 9: Abbreviated and Expanded Regression Models.....	86
Figure 10: Histogram of Residuals using EATCOMP as Dependent Variable.....	87
Figure 11: Normal P-P Plot of Residuals using EATCOMP as Dependent Variable.....	88
Figure 12: Histogram of Residuals using EATLOG as Dependent Variable.....	88
Figure 13: Normal P-P Plot of Residuals using EATLOG as Dependent Variable..	89
Figure 14: Revised Conceptual Model.....	105



## CHAPTER 1

### *Introduction*

In this chapter, the need for research linking the perception of parental acceptance-rejection and family functioning with eating disorders will be outlined. Two theoretical models, Human Ecology Theory and Symbolic Interactionism, will be discussed in detail, providing a foundation for the studies methodology. A theoretical map will be introduced to provide clarity in conceptualizing the two theoretical frameworks being incorporated into the project. Next research questions for the project are posed, followed by their corresponding hypotheses. A conceptual map of the relationships between variables is presented preceding a brief discussion of the project's methodology, which will be discussed more in-depth in chapter 3. Chapter 1 concludes with an overview of the content within the project's remaining chapters.

### *Statement of the Problem*

Post-puberty estimates of eating disorder rates in the United States indicate that 5-10 million females and 1 million males struggle with diagnosable or sub-clinical conditions (Crowther, Wolf, & Sherwood, 1992; Fairburn, Hay, & Welch, 1993; Shisslak, Crago, & Estes, 1995). Statistics focusing more specifically on rates of clinical diagnosable eating disorders find 2 million females (3%) meeting these criteria in the United States (Mussell, Binford & Fulkerson, 2000) with incidence rates for anorexia nervosa ranging between .5%-1.0% and 1.0%-3.0% for bulimia nervosa (American Psychiatric Association, 1994). In the college age population the rates reach as high as 4% to 13% (Halmi, Frank & Schwartz, 1981; Smith & Thelen, 1984). It is estimated that

approximately 90% of individuals seeking mental health services for eating disorders are female (Fairburn & Beglin, 1990).

Further, peak onset for anorexia nervosa is 17 years of age (American Psychiatric Association, 1994), implicating the family system in the etiology or maintenance of the illness as the child is assumed to still be living in the home environment. Although the incorporation of disordered eating into the family sciences literature has increased considerably over the past two decades, a study looking at the relationship between the presence of disordered eating and perception of both parental rejection and unhealthy family functioning is absent. The proposed study calls for a remedy to this problem of insufficient knowledge regarding these relationships.

### *Purpose of the Study*

The current study aimed to explore the relationship between eating attitudes and behaviors with perception of parental acceptance-rejection and family functioning. Greater understanding of these possible linkages serves to outline future therapeutic interventions to be used with individuals seeking treatment for eating disorder behaviors. It is well known that eating disorders are multi-faceted and multi-dimensional phenomena, whereby numerous variables account for the presence and maintenance of symptomatology. A person-context model was used in this study's research design whereby characteristics of both the person and the environment were examined as to their effects on the individual's development, specifically their eating attitudes and behaviors. The accumulation of new knowledge in this area, including the incorporation of both parental rejection and family functioning, allows for increased understanding of the multitude of variables leading to an individual's eating attitudes and behaviors.

### *Theoretical Frameworks*

Two primary theoretical frameworks have been identified to guide the conceptualization of the proposed research. Human ecology theory and symbolic interactionism connect individual functioning to the immediate familial environment.

Human ecology theory anchors the proposed study through the incorporation of contextual family factors into the key variables: parental rejection and family functioning. Human ecology theory, as developed by Bronfenbrenner (1979), contends that a person's ecology includes four interacting systems including the microsystem, mesosystem, exosystem, and macrosystem. The proposed study focuses on the microsystem of the family environment, examining the variables of rejection and functioning. The family microsystem is rich with communication and reciprocal interactions between members. Study participants' perceptions of parental rejection/acceptance and family functioning will be used to understand their family context and identify if these two constructs influence the presence of disordered eating symptomatology. Bronfenbrenner's concept of proximal processes as embedded within the microsystem creates a context for meaning making and perceptual interpretation, inviting symbolic interactionism as a second guiding theory into the study.

According to symbolic interactionism, perceptions are extracted through reciprocal interactions occurring within the microsystem. These definitions, as interpreted by the individual family members, connect human ecology theory to symbolic interactionism. The notion of defining the situation, according to symbolic interactionism theory, occurs at the microsystemic level including the family context. Each individual family member interprets or makes sense of a situation or event. It is critical however, to

view this individual processing as part of the mutual interactive sequences that occur in the context of families. The perception of parents' level of acceptance or rejection as well as the perception of the family's functioning will be assessed through the experiences of the study participant. Following is a discussion of each of the study's guiding theories, human ecology theory and symbolic interactionism.

### *Human Ecological Theory*

Urie Bronfenbrenner (1979) described the basis of an ecological approach to human development as including "the interaction between individual and environment." An orientation to context and the interaction between an organism and its environment defines an ecological perspective as looking beyond the individual organism to its environment for questions and explanations about the organism's behavior, functioning, and development (Bronfenbrenner, 1979; Griffore & Phenice, 2003).

The incorporation of *contexts* with the *developing person* makes up the foundation of human ecology theory. Human ecology theory draws from biological, behavioral, and social sciences with a focus on the conditions and processes, which contribute to the shaping of human development (Bronfenbrenner, 1995, Bubolz & Sontag, 1993; Bubolz, Eicher, & Sontag, 1978). Classic human ecology theory conceptualizes four environments: the microsystem, mesosystem, exosystem, and macrosystem, arranged in a concentric circle formation (Bronfenbrenner, 1979). The proposed study looks specifically at the microsystem.

The microsystem is defined as the actual setting in which the individual experiences and creates day-to-day reality including the places inhabited, the people living with them or surrounding them, and the activities they participate in together

(Bronfenbrenner, 1979; Bubolz & Sontag, 1993). The current investigation uses the perceptions derived from the interactions between the study participant and her family over time. The microsystems in which study participants are assumed to be involved include family-of-origin and the university setting; however, only family-of-origin perceptions are being actively investigated. The university and peer microsystems are not included in the present study.

Human ecology theory compliments family systems theory through their conceptualizations of how and why an individual functions (or doesn't function). For instance, Minuchin, Rosman, and Baker (p. 21, 1978) state, "the psychological unit is not the individual; it is the individual in her significant social contexts." The "significant social context" being studied here is the perception of the familial environment.

Human ecology theory uses a *process* orientation rather than a content driven analysis, whereby all systems and environments are assumed to interact. Four major components included in this process perspective include perceiving, valuing, decision-making, and spacing (Freedman Melson, 1980). For the purposes of this study, primary attention will be paid to the concept of perceiving.

Perceiving is a process whereby environmental information is registered, organized and made available for use by the system (Freedman Melson, 1980). It is a process of deriving meaning from environmental stimuli. For instance, a child uses cues from his or her parents, filtering them through their information processing avenues. Perception involves interpretation based on previous experiences and future expectations. Each family member relates to the family as it appears through the prisms of his or her own perceiving process (Freedman Melson, 1980). Using human ecology theory, the

incorporation of context into understanding individuals' processing enhances researchers' abilities to study how and why people think, behave, and feel the way they do.

Since the original formulation of human ecology theory in the 1970s, Bronfenbrenner has more recently gone on to shift his language to include a "bioecological paradigm" (Bronfenbrenner, 1995). Bronfenbrenner describes the bioecological concepts as "latent" within the original human ecology theory, but more recently he strives to make them explicit in his literary works. The bioecological paradigm uses a process-person-context-time (PPCT) model. All four of the dimensions included in the PPCT paradigm are considered to be interconnected and interdependent. A brief description of each follows.

Context is specified to include both an individual's biopsychological characteristics and the environments in which she lives and grows. This multifaceted influence approach on development views the person as context, including her genetic, biological, and psychological processes. The time dimension of the PPCT model includes historical and cultural events as well as life cycle stages that impact an individual's development. Finally, the process dimension refers to interactions that take place over time between an individual and significant others, objects or symbols in their life.

Embedded within the bioecological model are proximal processes, which are used as templates for studying human development and interaction. Proximal processes consist of reciprocal interactions over time between a human organism and the various components of his or her external environment, such as persons, objects, and symbols (Bronfenbrenner, 1999). An example of a proximal process includes the interaction between a baby and mother as the mother feeds and strokes the fine hair of the infant

while the baby reciprocates the attention by falling to sleep, sucking, smiling, or touching the mother's skin. A key piece to understanding proximal processes is to acknowledge the interaction takes place over time. Interactions must continue long enough to become increasingly complex, such as those between parent and child (Fenichel, 2002).

Proximal processes form a foundation whereby a reciprocal relationship is fostered between dyads in a family system. In accordance with family systems' theory, the family consists of interdependent individuals whose perceptions and resulting behaviors mutually affect one another. A meta-analysis by Rothbaum and Weisz (1994) found children's contribution to the relationship between parental rejection and behavior problems is at least as strong as the parents', which implies a bi-directional, reciprocal relationship. Perceived rejection appears to elicit a variety of aversive personality and behavioral characteristics that, in turn, provoke the susceptible parent to further reject the child. The child responds to the further rejection, and the exchange eventually leads to development of a mechanism to cope with the pain (Campo & Rohner, 1992).

This is a process view of the psychological concept of perception and family system's concept of interdependence. Bronfenbrenner and Ceci (1994) state that these processes involve content and, at the beginning, this content is external to the person. Over time, development consists of involving the interaction between the organism and her environment, whereby "the external becomes internal and becomes transformed in the process" (Bronfenbrenner & Ceci, 1994, p. 575). This is the aspect of the process, which the current study focuses on, the internalization of the perceived external. In other words, a daughter's incorporation of how she perceives her parents to accept or reject her into the many facets of her life including her attitudes and behaviors involving food. The

extension of this process not included in the current study, but important to note is the idea that the organism then begins to change her environment over time, whereby “the internal becomes external” (Bronfenbrenner & Ceci, 1994, p. 575). This reciprocal interaction typifies proximal processes within the bioecological model.

Bronfenbrenner postulates in the bioecological paradigm that proximal processes may serve to buffer against environmental differences in developmental outcomes (Bronfenbrenner, 1995). In other words, if a child were to interpret the interaction between herself and her primary caregiver as satisfying, emotionally fulfilling, and communicative of acceptance, it is predicted that this relationship will influence the presence of disordered eating attitudes and behaviors on the part of the child.

Bronfenbrenner goes on to state,

“What is most revealing about proximal processes, however, is not the gain in predictive power that they provide, but their substantive and theoretical significance as the mechanisms of organism-environment behavioral interaction that drive development, and the profound ways in which these mechanisms are affected by characteristics of the developing person and of the environmental context in which the interaction takes place (Bronfenbrenner 1995, p. 626).”

Using the PPCT model as part of the larger bioecological and human ecology frameworks, this project theorizes the inclusion of the following variables to fulfill each of the model dimensions. First, process will be measured indirectly through the assessment of both parental acceptance-rejection and family functioning. It is assumed that the proximal processes at the base of an individual’s relationship with her parents will factor into her interpretation and classification of their relationships. Bronfenbrenner (1995) has called for research looking at different types of dyads on the nature and power of the proximal processes that take place, and the resultant kinds of developmental outcomes fostered. The current study looks at the mother-child and father-child dyads



with the quality of proximal processes implied in the study's independent variables of parental acceptance-rejection and family functioning.

The sample will consist of females between the ages of 18 and 25, indicating the "person" dimension of the study. Additionally, the score derived from the eating attitudes test will indicate a component of this dimension as it is theorized to include psychological processes. Bronfenbrenner dichotomizes two types of person characteristics including biopsychological resources and directional dispositions. This study draws upon the latter, which highlights the person as an active agent who selects stimuli to be responsive to. The former refers to an individual's abilities, temperament, and personality which are not included as variables in this study.

The context of the study's participants is being measured through several variables including family income (socio-economic status), birth order, parent's relationship status, and family functioning assessment. Further, each participant is assumed to be immersed in the university environment, making up a physically and culturally different context compared to that of their family's home environment.

Finally, the time dimension of the model is linked to the context of the participant's lives. Based on their age and enrollment in college courses it is assumed that the majority of the study participants will be in the launching stage of their life cycle according to Duvall, connoting their developmental phase of broaching adulthood (Strong, DeVault, Sayad, & Cohen, 2001).

According to the bioecological paradigm and human ecology theory, the inclusion of both beliefs and behaviors in a research design will enhance the explanatory power of analytic models (Bronfenbrenner, 1995). In the project at hand, perceptions of parental

acceptance-rejection and family functioning are incorporated as functions of beliefs and behaviors measured include those associated with food and eating.

Freedman Melson (1980) supports the notion that environmental information is never neutral, but rather loaded with symbolic meanings of past history and present experience. These symbolic meanings invite symbolic interactionism into the framework of this study in an effort to clarify how situations are defined and, in turn, influence individual systems embedded in relational contexts.

### *Symbolic Interactionism*

Ernest Burgess called upon his colleagues in 1926 to study the family as a “living, changing, growing thing,” contending that “the actual unity of family life has its existence... in the interaction of its members” (Burgess, 1926, p. 5). Since Burgess’s plea, proponents of symbolic interactionism for the study of families acknowledge the limitation of other theories that aim to discuss social factors as independent variables and behavioral variables as dependent (Burr, Leigh, Day, & Constantine, 1979). Definitional attributions, according to symbolic interactionism theory, are the meaning-making processes that individuals engage in whereby their perceptions are shaped and molded. For instance, a child may attribute a parents’ behavior of continually leaving her with a neighbor as rejecting. It is this interpretation that is suggested in the language of definitional processes or attributions. Some theorists suggest that more variance in the dependent variables may be accounted for by focusing on these definitional processes as more direct causes (Burr, et al., 1979). The current study utilizes this line of thinking and aims to look at the definitional attributions as predictive of behavioral sequences, specifically disordered eating.

Symbolic interactionism has a number of contributors to its multi-faceted and complex viewpoint of studying families. George Herbert Mead, Charles Horton Cooley, William Isaac Thomas, and Herbert Blumer are a few whose ideas are most clearly articulated in the literature. Cooley, in particular, laid a groundwork within symbolic interactionism to make it highly compatible with Bronfenbrenner's human ecology theory. Cooley has acknowledged that the individual and society are two sides of the same coin with no individual existing apart from society (Longmore, 1998). In accordance with human ecology theory, symbolic interactionism proposes families to be social groups wherein members develop their identities and self concept through social interaction (LaRossa & Reitzes, 1993). Meanings emerge from interaction between subject and object (LaRossa & Reitzes, 1993). These meanings elicit congruent behaviors as a result of the definition given by the interpreter. Symbolic interactionism is a solid foundation for the proposed study in that it has a micro orientation, focusing on intra- and interpersonal phenomena (Burr, et al., 1979). Symbolic interactionism adds a dimension to human ecology theory by acknowledging interpretations and perceptions of individuals, whereas human ecology theory emphasizes the environment in which these interpretations are made.

According to symbolic interactionism, people define situations based on their own personal experiences and sense of self. Mead believed that people learn about themselves through interactions with others, therefore making interactions necessary for the full development of a sense of self (Mead 1934/1956). Mead is known for his contributions to the theory including the conceptualizations of *self* and *mind* (Winton, 1995). The self is said to refer to an individual's capacity to step outside and view themselves as part of the

environment. George Herbert Mead held an optimistic view that when individuals take appraisals from others, they are interpreted through a selective process that filters out the negative aspects of self, holding onto only those that are positive. Mind, Mead's second primary concept, postulates that a sequence develops from thinking to action. Cast (2003) highlights that meaning is attached to one's identity, leading to particular behaviors, such as disordered eating. For instance, if one perceives herself as rejected, resulting behaviors might be aligned with this identification to make it more valid. Alternatively, attempts at remedying the rejection, such as trying to be more perfect and lovable may be another way for the child to respond.

Mead also postulated that thinking, the primary activity of the mind, is a necessary precursor to action (Winton, 1995). In applying this concept of thoughts precede action in the current study, a young woman perceiving herself as rejected by her parents, will feed into actions, likely aimed at confirming or denying the perception. The relationship being discussed here is not linear when symbolic interactionism is combined with human ecology theory whereby systems affect systems. The way in which people define, or perceive a situation will affect the action they take in the context of that situation (Winton, 1995). Further, individuals' perceptions of others' thoughts and feelings about them may be internalized and significantly influence their construction of the self-concept (Wonderlich & Klein, 1996).

In contrast to Mead's conceptualization of the self as being highly responsible and able to filter through messages, discarding the negative or harmful and choosing to incorporate the positive, Cooley presents a somewhat different interpretation. Commonly known as the "looking glass self", Cooley believed an emergent image of self is

internalized based on the input received from others (Longmore, 1998). The following quote comes from Murdock (p. 108, 1992) and highlights the concept of the looking glass self as well as the importance of paternal influence on female development to be discussed in Chapter 2,

“A young girl’s relationship with her father helps her to see the world through his eyes and to see herself reflected by him. As she sees his approval and acceptance, she measures her own competence, intelligence, and self-worth in relation to him and to other men.”

Just as a girl or woman’s sense of approval and acceptance from her father can positively impact her development and adjustment, a sense of rejection from her father will likely negatively influence her growth.

Cooley further describes that a person takes on the identity of what she believes others see, in essence, the expectations of others are central to the development of self perceptions (Winton, 1995; Longmore, 1998). The looking glass self is thought to emerge in the context of primary groups, with family being one example. Cooley acknowledges in his writing, “it is in the family that an infant becomes aware of others and interested in gaining their approval and support for a positive self-conceptualization” (LaRossa & Reitzes, 1993). The family has been said to be the major institution of socialization, thereby serving as the foundation for the development of self for each of its members.

A number of assumptions exist within the symbolic interactionism framework that serve as a guide and foundation for the proposed study. These assumptions include: 1) perceptions are one important determinant of how a situation is handled, 2) people react to something according to its idiosyncratic meaning, or what it symbolizes to them, 3) meaning is derived through interaction with others, 4) interpretation emerges about what a person learns as they comes into contact with different situations and experiences, 5)

humans develop ideas about themselves through interacting with others, 6) humans are reflexive whereby they incorporate experiences into a guide for future behavior and finally, 7) individuals are influenced by family as well as the larger culture and society (Ingoldsby, Smith, & Miller, 2004; Burr, et al., 1979).

William Isaac Thomas's contribution to symbolic interactionism included the creation of a concept known widely as "defining the situation" (LaRossa & Reitzes, 1993). Identities both result from, and are fostered by interactions according to the process of "defining the situation" (Cast, 2003; Burr, Leigh, Day, & Constantine, 1979). Subjective meaning is given to a particular situation by an individual (Burr, et al., 1979; LaRossa & Reitzes, 1993). Definitions therefore are synonymous with the concept of perceptions when using symbolic interactionism language (Burr, et al., 1979). Thomas described the phrase "definition of the situation" to mean one cannot understand behavior without also understanding the subjective perspectives of the individuals involved in the situation (Ingoldsby, Smith, & Miller, 2004). Tenets of postmodernism and social constructionism can be clearly be linked to Thomas's contributions to symbolic interactionism, whereby reality is thought to be constructed through a process of interaction in groups (Hoffman, 1990). Thomas theorem states, "if an individual defines a situation as real, they are real in their consequences" (Burr et al., 1979; LaRossa & Reitzes, 1993). At its core, the Thomas theorem contends that social situations are not completely determined by objective conditions, but are also influenced by attitudes and subjective definitions of the situations held by the interacting subjects (LaRossa & Reitzes, 1993). In other words, whatever the definition is according to the individual, this

definition will influence how he or she responds through action (LaRossa & Reitzes, 1993).

Symbols are products of social interaction, with their meaning ascribed by the way we see others using them (LaRossa & Reitzes, 1993). Symbols are defined based on the context of the situation, being something learned from interacting with others in an environment (Ingoldsby, Smith, & Miller, 2004). Additionally, interdependence exists between symbols and interaction. Interaction involves communication between at least two people where reactions and modifications of behavior take place (Ingoldsby, Smith, & Miller, 2004). In the context of the proposed study, the interactions that take place between parents and child over time serve to create meaning for the child about how his or her parents respond to him or her. The symbol, in the conceptualization of this study, includes parental acceptance or rejection as evidenced by various aspects of the interaction from verbal to non-verbal exchanges.

### *Theoretical Map*

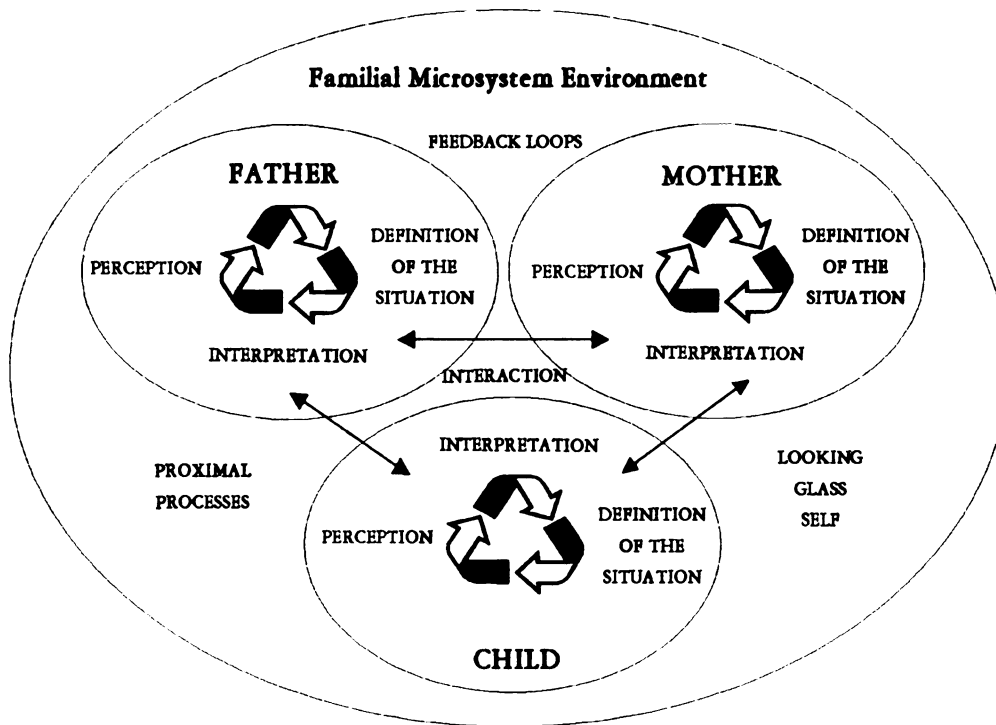


Figure 1: Theoretical Map

### *Research Questions*

The research questions for this study examined a predictive relationship between measures specific to perceptions of parental acceptance-rejection and family functioning with disordered eating symptomatology. The overarching research question proposed in the study asked:

- Are parental rejection and family functioning related to disordered eating symptomatology?

In addition to this core research question, several others have been developed to better understand the variables' relationships to one another.



1. Does parental acceptance-rejection differ between individuals with disordered eating and those without?
2. Does family functioning differ between individuals with disordered eating and those without?
3. Does the presence of parental rejection predict disordered eating symptomatology?
4. Does the perception of unhealthy family functioning predict disordered eating symptomatology?
5. Is maternal or paternal rejection a better predictor of disordered eating symptomatology?

### *Hypotheses*

Disordered eating may be one form of coping behavior employed to reduce or minimize some of the psychological pain produced by perceived parental rejection and a negatively functioning family. Each hypothesis below corresponds with the research question identified above. This study has been designed to address the following hypotheses:

1. Individuals presenting as disordered in their eating will perceive their parents as more rejecting than individuals without disordered eating symptoms.
2. Individuals presenting as disordered in their eating attitudes and behaviors will perceive their families to be less healthy in terms of family functioning, than individuals without disordered eating difficulties.

3. Individuals indicating more parental rejection will exhibit greater degrees of disordered eating.
4. Individuals indicating unhealthy family functioning will exhibit greater degrees of disordered eating.
5. Although it is hypothesized that individuals reporting higher levels of disordered eating will perceive both their mothers and father to be more rejecting than the non-eating disordered group (hypothesis 1), it is further hypothesized that individuals reporting disordered eating symptomatology will perceive their fathers to be more rejecting than their mothers.

*Conceptual Model*

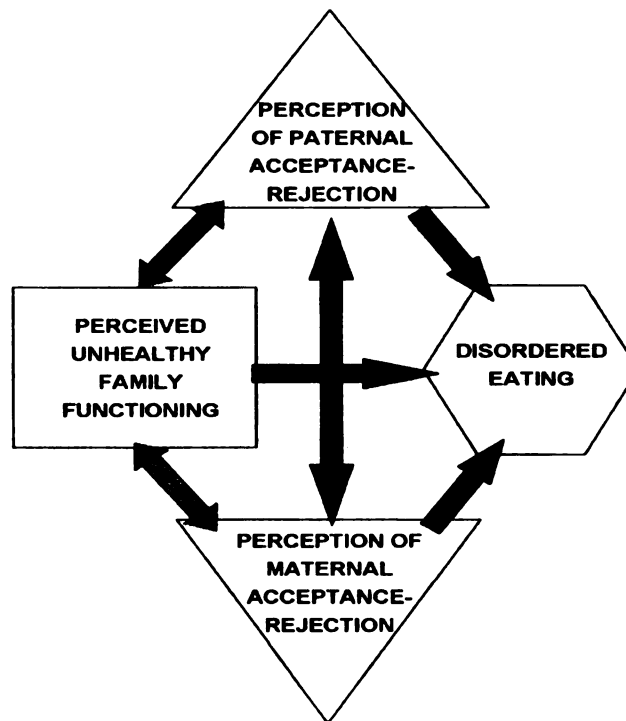


Figure 2: Conceptual Model

### *Methodology*

Cross-sectional data was collected from a sample of college-students attending a large Mid-western university to facilitate a correlational design to analyze data. Purposive sampling procedures were used to assist in attaining a sample representative of undergraduate females between the ages of 18 and 25 years. Students enrolled in large undergraduate psychology and family and child ecology courses were invited to participate in the study by completing a battery of assessments via computer or classroom recruitment. Self-report instruments aim to assess perceptions of parental rejection-acceptance, family functioning, and disordered eating. Data were analyzed by using t-tests for research questions 1 and 2 and multiple regression analysis for questions 3, 4, and 5.

### *Overview of the Dissertation*

Chapter 1 has described the purpose, guiding theoretical frameworks, research questions, hypotheses, conceptual model, and provided a brief overview of the project's methodology. Chapter 2 provides a review of the relevant literature pertaining to disordered eating in the family context. In addition, the literature review discusses the construct of rejection and Ronald Rohner's conceptualization of the parental acceptance-rejection framework. Chapter 3 delineates the specific methodology that will be used to address the study's research questions. Chapter 4 presents the statistical results. Finally, Chapter 5 will provide a discussion based on the data as well as limitations, clinical implications, and future directions.

## CHAPTER 2

### Review of the Literature

#### *Introduction*

The previous chapter highlighted the purpose of the present study to fill a gap in research that addresses the relationship between parental acceptance-rejection and family functioning as predictive of disordered eating in females. In this chapter, existing literature will be reviewed to support such a study, including familial influence on disordered eating, perception of family functioning, and the construct of parental rejection. The present study is considered exploratory in nature because no other study to date has explored these independent variables of parental rejection and family functioning as related to disordered eating attitudes and behaviors representative of anorexia nervosa and bulimia nervosa symptomatology. Although the literature addresses other ecological factors contributing to the existence of disordered eating such as peers, genetics, media influence, cultural expectations, and developmental life cycle stage, this study is aimed at focusing on family influences, in particular, how the perception of maternal and paternal characteristics impact the presence of symptoms. Therefore, according to Human Ecology Theory, the microsystem chosen for analysis in this study is that of the immediate family with consideration that others exist (university, peers, etc.), but are not being measured at this juncture.

#### Disordered Eating and Familial Environment

##### *Early Family Typologies*

Since the earliest case descriptions of anorexia nervosa, dating back to 1860, families have been reported as critical to the etiology and maintenance of the disorder

(Ward, Ramsay, Turnbull, Benedettini, & Treasure, 2000). Family clinicians and theorists, beginning with Salvador Minuchin and Mara Selvini-Palazzoli, have identified the familial environment with an eating disordered member to include particular characteristics. Minuchin and colleagues (1978) contend, through clinical observations that four main defining features exist within families with eating disordered members. These four features include enmeshment, rigidity, over protectiveness, and lack of conflict resolution (Minuchin, Rosman, & Baker, 1978; Minuchin & Fishman, 1979). Selvini Palazzoli (1978) finds many similar family traits in her practice, but uses different language when communicating them. Selvini Palazzoli finds the family characteristics of eating disordered environments as including a high degree of marital dysfunction, leadership problems, rejection of communicated messages, poor conflict resolution, covert alliances or “denied coalitions”, blame shifting, and extreme rigidity (Vanderlinden & Vandereycken, 1989; Selvini Palazzoli, 1978). Empirical studies have generally upheld that anorexic families tend to display greater boundary pathology, in particular enmeshment patterns as originally postulated by Minuchin and bulimic families evidencing heightened levels of hostility and conflict as well as nurturance deficits (Kog & Vandereycken, 1989; Humphrey, 1986; Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986)

### *Content versus Process Driven Research*

Most studies focusing on family in regards to eating disorders have looked at areas such as family and parental functioning, communication patterns (White, 2000), parental attitudes toward weight and body (White, 2000), parental modeling (MacBrayer, Smith, McCarthy, Demos, & Simmons, 2001; Kichler & Crowther, 2001) intra-familial

teasing (MacBrayer et al., 2001; Kanakis & Thelen, 1995), and parents own issues with weight, food, and their bodies (Steiger, Stotland, Trottier, & Ghadirian, 1996; Steinberg & Phares, 2001).

Research relating the *content* associated with eating disorders such as food, weight, appearance-driven comments, and body image has a large representation in academic journals. MacBrayer, Smith, McCarthy, Demos, & Simmons (2001) developed a measure of family of origin food-related experiences and family modeling influences called the Family History Inventory (FHI). The FHI contains 14 primary scales including the assessment of such factors as teasing by various family members (siblings, father, grandparents, mothers) relationship with food, rules pertaining to eating, meal structure, and the use of food as rewards within the family system. Results from their study indicated higher rates of bulimic symptoms were correlated with teasing by one's family about one's weight and observation of negative maternal modeling with respect to food (MacBrayer et al., 2001).

Another form of content-based research includes teasing and criticism with regards to the topic of weight and appearance in peer groups versus families. Kanakis and Thelen (1995) found bulimics and sub-clinical bulimics reported being affected more by family criticism and teasing on the topic of weight compared to peers. Specifically, there were no group differences in the effect of being teased by one's peers in the three groups studied: bulimic, sub-clinical bulimic, and non-eating disordered (Kanakis & Thelen, 1995).

For instance, White (2000) found that parental comments influence children's degree of body dissatisfaction, fears about being fat, and weight-loss attempts. Kanakis

and Thelen (1995) add that individuals with bulimia and sub-clinical features of the disorder reported greater effects from family teasing than by peer teasing about being overweight as compared to controls. More recently, Haworth-Hoepfner (2000) identified four conditions that foster the development of an eating disorder in families to include a critical family environment, coercive parental control, unloving parent-child relationship, and a main discourse on weight. The factors identified above including family teasing, negative comments about children's bodies, weight, and shape, critical and controlling parenting, and a family environment focused on weight and appearance can all be said to contribute to an overt form of rejection regardless of the child's interpretations. The current study is more interested in if a child perceives herself as rejected outside of the realm of weight, shape, and appearance-based factors, a more generalized rejection. The key piece to measuring this construct of rejection is that it is indicated by the child, involving the perceptual component.

Beyond research focusing on symptom driven, or content-oriented studies, there is an opportunity for process research to emphasize more on the internal workings of the family as related to the etiology and maintenance of disordered eating. Process-oriented research would also be interested in the perceptions of family members regarding functioning and general family environment and apply these perceptions to the presence or absence of symptoms. Research targeting less *content* driven analysis such as dieting, and more emphasis on the *process* of family interactions has included such variables as parenting style, family modeling, intergenerational transmission, and overall family functioning of families with and without disordered eating. One study focusing on these family process variables in participants with binge eating behaviors, found these

individuals tend to rate their families as having more conflict and control than a group of controls (Hodges, Cochrange, & Brewerton, 1998). Fonseca, Ireland, and Resnick (2002) also found their index group of females to report significantly lower levels of family connectedness and communication using a non-clinical sample of high school students. Another study has found that families including a bulimic individual tend to exhibit lower levels of family support and connectedness (Fairburn, Welch, & Doll, 1997). Females struggling with bulimia report experiencing their families as distant, conflictual, and non-supportive (Humphrey, 1989; Johnson & Flach, 1985). A presumably fertile environment for perceived rejection has been evidenced in the studies just cited, but thus far questions pertaining to their feelings of parental acceptance versus rejection have not been asked of study participants by researchers. Again, an environment that is distant, conflictual, and non-supportive may foster the likelihood that a child feel rejected, but does not guarantee a child will feel rejected. This study looks to uncover if the children who both report these types of environments as well as identify themselves as rejected have a higher likelihood of displaying disordered eating symptomatology.

#### *Perceived Family Functioning and Environment in Eating Disordered Families*

As stated earlier, a specific kind of process-oriented research can be identified as including individual's perceptions of family functioning and overall environment. Neumark-Sztainer, Story, Hannan, Beuhring, and Resnick (2000) surveyed a sample of 9,943 seventh, ninth, and eleventh grade students to find that youth at increased risk for disordered eating included those who perceived family communication, parental caring, and parental expectations as low. Several researchers (Johnson & Flach, 1985; Ordman & Kirschenbaum, 1986; Humphrey, 1988; Kog & Vandereycken, 1989) have studied the



perceptions of individuals with bulimia on the area of family functioning and parental characteristics. These studies have yielded perceptions of family functioning in disordered eating groups as compared to control groups as being less expressive, less cohesive, more conflictual, disorganized, achievement oriented, and hostile. Further, parents of individuals with bulimia were perceived as being more blaming, rejecting, neglectful and less nurturant and comforting compared with controls.

Felker and Stivers (1994) examined the relationship between family environment and the risk of developing an eating disorder using the Family Environment Scale. A significant relationship was found between family environment and the development of anorexia or bulimia in an adolescent population. Specifically, participants who perceived their family environments to be less cohesive, less organized, less independent, less expressive, more conflictual, higher on parental control, and including a greater orientation toward achievement were associated with an increased risk for the development of an eating disorder (Felker & Stivers, 1994). Another study of interest to utilize Moos and Moos's Family Environment Scale targeted 175 female undergraduates (Scaif-McIver & Thompson, 1989). This study investigated the relationship between degree of bulimic symptomatology and family dynamics. Results indicated a negative correlation between cohesion and bulimia symptoms, with commitment and support decreasing as bulimic symptoms increase.

In a study looking at the link between attachment style and family functioning as related to the presence of eating disorders, families of eating disordered patients were found to be less cohesive, expressive, and encouraging of personal growth as compared to controls (Latzer, Hochdorf, Bachar, & Canetti, 2002). Using an attachment theoretical

basis, these researchers hypothesized that a family environment unable to provide a sense of security and availability contributes to the presence of detachment that characterizes mental disorders in general, and eating disorders in particular (Latzer, et al., 2002). Using the Adult Attachment Scale and the Family Environment Scale, Latzer and colleagues (2002) discovered an association between both an insecure attachment and particular family environment characteristics with eating disorders. Specifically, lower levels of cohesiveness were found in families with a bulimic member and lower levels of expressiveness were found in both anorexic and bulimic families (Latzer, et al., 2002). It is important to note that the differences in family environment disappeared when attachment style was controlled in this study. The researchers interpret this finding to mean that attachment style may be a primary differentiating factor in the onset of eating disorders, however, they go on to postulate that the interaction between attachment and environment is what determines the development of an eating disorder.

The present study has utilized the Family Assessment Device (Epstein, Baldwin, & Bishop, 1983) to measure family functioning. The following studies have also included this measurement with eating disorder populations. McGrane and Carr (2002) have studied the link between Eating Disorder Inventory-2 scores indicating more severe levels of psychopathology, with scores on the Family Assessment Device (FAD) indicating more perceived family dysfunction. A group of 27 individuals scoring above the clinical cut-off on the EDI-2 were compared to a group of 27 controls. T-tests were used to assess differences between the groups with results indicating significant differences ( $p < .01$ ) on the dimensions of problem solving, roles, affective responsiveness,

and general functioning, with women in the eating disordered group reporting greater difficulties in these family areas.

Compared with controls, families with an eating disordered member report greater dysfunction on the communication and affective responsiveness sub-scales of the Family Assessment Device (Steiger, Liquornik, Chapman, & Hussein, 1991). Additionally, women having both anorexia and bulimia have been found to rate their families as more unhealthy on the affective involvement and behavior control scales of the Family Assessment Device (Waller, Calam, & Slade, 1989). Women with bulimia were also shown to rate their family as having problem solving difficulties according to the FAD (Waller, Calam, & Slade, 1989).

Waller, Slade and Calam (1990) compared perceptions of family functioning with three groups including anorexic (n=14), bulimic (n=34), and non-eating disordered women (n=30). The researchers used the Family Assessment Device which measures problem solving, roles, affective responsiveness, affective involvement, communication, behavior control, and general functioning. Results indicate that the anorexic and bulimic groups did not differ significantly, therefore providing a rationale for coming these two groups. The combination of these two symptom groups will be replicated in the present study through the use of the Eating Attitudes Test-26. Wonderlich and Swift (1990) also found a lack of difference among various eating-disorder subtypes with regard to their perceptions of their parental relationships.

Waller (1994) conducted a study looking at the perceptions of family functioning from a sample of 81 bulimic women to explore if a relationship existed with the dependent variable, eating attitudes and behaviors. Multiple regression analyses for the



sample of 81 women indicated a non-significant predictive relationship between the Family Assessment Device and the dependent variable derived from the Eating Attitude Test score. Waller (1994) looked more closely at specific symptomatology, however, to discover that increased bingeing behaviors were related to increased perception of poor problem solving and low degrees of cohesion within the family. Additionally, women rating their families as more cohesive binged less frequently. Extrapolating from these findings, Waller (1994) suggests the possibility of protective and risk factors associated with specific symptoms. For instance, perception of poor problem solving served as a risk factor for bingeing with perception of higher levels of family cohesion serving as a protective factor for bingeing (Waller, 1994). Risk factors have been identified as increasing the likelihood of maladaptation (Rutter, 1990) whereby compensatory factors are defined as reducing the risk of developing problems such as emotional, psychological, and social (Steinhausen & Winkler Metzke, 2001).

In a study looking to identify factors that influence emotional and behavioral abnormalities in adolescence, perceptual components of parental acceptance-rejection were implicated as both risk and compensatory factors for mental health measures. Specifically, using analysis of variance, parental acceptance was shown to have a significant main effect as a protective factor and parental rejection was indicated as a risk factor for both internalizing and externalizing scores (Steinhausen & Winkler Metzke, 2001). Another study indicating the conceptualization of parental acceptance as protective or compensatory and rejection as risk, evidenced that parental acceptance is associated with less substance use and abuse by youth (Campo & Rohner, 1992). These findings serve as the basis for the proposed study, as parental rejection is being

hypothesized as a risk factor, therefore contributing to the presence of more disturbed eating attitudes and behaviors.

### *Parental Influences*

A specific dyadic relationship that has been extensively studied in the literature is that between an eating-disordered daughter and her mother. Dating back to the writing and clinical work of Hilde Bruch (1974), the mother and eating disordered-daughter relationship has been examined through a lens of attachment, whereby the mother intrusively superimposes her own needs onto the child, resulting in the child not being able to differentiate her own impulses (Ward, et al., 2000). Mother-daughter dyads were also investigated by Rupp and Jurkovic (1996), looking at individuation and perspective-taking differences between bulimic and non-bulimic female adolescents and their mothers. Further, daughters' perceptions of family approval of her appearance were important predictors of higher body esteem. Mothers' own reports of their approval of their daughters' appearance were not significantly related to daughters' body esteem (McKinley, 1999).

Phares (1992) found a tendency in the literature to blame mothers for the vast majority of their children's psychological problems. A review of clinical child and adolescent research from 1984 to 1991 revealed that 48% of studies looked exclusively at maternal factors, whereas only 1% involved fathers exclusively (Phares, 1992). A gender variation in parental influence has long been speculated in the literature with eating disorders, often implicating maternal influences in the development of eating disorders (Kichler & Crowther, 2001; Moreno & Thelen, 1993). For instance, highly appearance-invested mothers who value dieting behavior, strive for weight loss, or engender family

competition based on physical attractiveness have been found to promote the development of a negative body image in their daughters (Haworth-Hoepfner, 2001). Another study by Moreno and Thelen (1993) looked at the difference between mothers and fathers of three groups including bulimic, sub-clinical, and normal. These investigators concluded mothers of bulimic individuals, and in some cases individuals reaching sub-clinical levels of pathology, were more likely to restrict their daughters' food intake and encourage their daughters' to diet and exercise in order to lose weight. The fathers in the study showed no significant differences between the three groups, indicating less investment in their daughter's weight issues (Moreno & Thelen, 1993; Kanakis & Thelen, 1995). In a follow-up study, bulimic and subclinical females were found to perceive more pressure to lose weight from their mothers than their father (Kanakakis & Thelen, 1995).

Through an analysis of over 150 studies researching psychosomatic disorders, a picture of maternal characteristics correlated with the presence of a psychosomatic-type disorder has been drawn to include domineering, overly involved, demanding, unempathic, insensitive, and rejecting, either overtly or covertly (Sackin, 1985). The vast majority of data presented in this review focuses on the maternal influence, all but ignoring the father's involvement in the development or maintenance of psychosomatic disorders. In an effort to remedy this limitation, the research being proposed will gather data using the launched child's perception of both her parent's acceptance or rejection.

Academicians and researchers have been much less interested in the father's role and relationship with his daughter as relating to the presence of disturbed eating attitudes and behaviors. An exception has been writer Margo Maine, author of "Father Hunger"

(1991). Maine postulates that females in particular exhibiting eating disorders experience an unfilled longing for a father's presence, both behaviorally and emotionally, in their lives (Maine, 1991). Unfortunately, Maine did not empirically test her contention using research, but only using clinical experiences as evidence.

The literature that does exist regarding fathers of eating disordered females suggest that they are typically considered to be "distant". In his remoteness, the distant father of an eating disordered daughter tends not to be involved and fails to understand her needs for love, encouragement, and affection (Friedman, 1997). In general, these fathers are written about as psychologically unavailable to their daughters (Secunda, 1992).

A recent study conducted by Dominy, Johnson, and Koch (2000) found that women with binge eating disorder reported their father to be more rejecting and less warm in comparison to mothers. This finding supports an analysis which looks at the perceptions of both maternal and paternal acceptance-rejection levels rather than a unified parental measure. Wonderlich, Ukestad, and Perzacki (1994) also found results indicating preliminary indications to suggest that a daughter's perceptions of her father may play a role in the development of eating disorders.

Wonderlich, Klein, and Council (1996) set out to examine how perceptions of parental behaviors such as attack, hostile disengagement, control, and submission specifically relate to the bulimic individual's self-attach and self-restraint. This team found fathers to be perceived by their bulimic daughters as significantly less friendly than their mothers. Whereby relationships with mothers were reported to consist of less interpersonal engagement and more mutual hostile withdrawal as compared to controls.



Based on this more recent research that focuses more on the process of perception rather than on appearance or dieting variables (often present in maternal-focused literature), this study hypothesized that perceived paternal rejection serves as a better predictor than maternal rejection for the presence of disordered eating. To clarify, it was hypothesized that both paternal and maternal rejection were significant in predicting disordered eating, but more specifically, it is thought, based on the evidence presented here, that paternal rejection accounts for more total variance than maternal rejection.

One study has used both paternal and maternal acceptance and rejection measurements with African American and European American youth, in relation it to psychological adjustment (Veneziano, 2000). The investigator was interested specifically in the variance accounted for by paternal versus maternal acceptance in psychological adjustment based on recent research suggesting that paternal warmth is often more significantly related to children's development than maternal warmth particularly in European American families. Using multiple regression analyses, it was found that youths' self-reported psychological adjustment scores using the psychological adjustment questionnaire, PAQ, was significantly related to perceptions of both paternal ( $r=.53$ ,  $p<.001$ ) and maternal acceptance ( $r=.46$ ,  $p<.001$ ). Interestingly, in the European American sample, maternal acceptance-rejection as a main effect was eliminated from the model due to a lack of statistical support. This finding signifies the importance of measuring paternal acceptance-rejection, which has not consistently been included by researchers as Ronald Rohner's initial assessment was created only for mothers. Although this study is not specific to eating attitudes and behaviors, it highlights the

importance of considering both parents' influence as opposed to measuring the parental collective or only measuring one parent, which traditionally has been the mother.

### *Construct of Rejection*

In an extensive review of the literature completed by Rohner and Nielsen (1978) over two decades ago, the researchers documented 600 studies completed with an incorporation of parental acceptance-rejection language. Unfortunately, many of these studies cannot be compared due to inconsistent operationalization of parental rejection.

Early studies in the area of parental rejection tended to focus on maternal deprivation, whereby Bowlby described the child lacking warmth, intimacy and a continuous relationship with his or her mother (Bowlby, 1966). Three ways of measuring parental rejection including monitoring parental behaviors and coding them as rejecting, accepting, or neutral, inquiring about parental feelings and attitudes toward their child(ren), or assessing the child's perceptions of his or her parent's rejection or acceptance (Envoy, 1981). It is this latter method of measurement and conceptualization of the concept that is of particular interest for the current study. Embedded within a child's perception lies the concepts of interpretations and meaning, whereby the subjective experience of rejection is critical to its presence rather than objective observations (Hawkes, 1957).

John Envoy incorporated this meaning into his phenomenological work, studying individuals who presented as *feeling* rejected by his or her parents, regardless of the extent to which the presented feelings corresponded to parental attitudes or behaviors (Envoy, 1981). Further, in a study measuring the intergenerational continuity of parental rejection and its association with depression, the researchers operationalized rejection

similarly to both Envoy and Rohner, stating it is a felt lack of parental warmth and caring with parents being emotionally withdrawn and expressing dissatisfaction to their children (Whitbeck, Hoyt, Simmons, Conger, Elder, Lorenz, & Huck, 1992). Barnow, Schuckit, Lucht, John, and Freyberger (2002) included parental rejection as a factor in a path analysis researching its effects on alcohol problems in teenagers. These researchers utilized a similar definition of the construct including lack of emotional warmth or support as measured by the EMBU, a Swedish measure (Barnow, et al., 2002). Unfortunately, neither Envoy (1981) or Whitbeck, et al. (1992) used a standardized measurement of parental rejection to make comparisons to their findings suitable to future research. The incorporation of Rohner's universal parental acceptance-rejection questionnaire, a standardized measure, is proposed for utilization in the current study for this reason of future replication and ease of comparative analysis.

Ronald Rohner made great strides to operationalize the abstract construct of parental rejection and acceptance by placing the two concepts on opposite poles of a continuum he describes as a warmth dimension. Another writer, John Envoy, was also been intrigued by the parental rejection construct as it related itself to therapeutic work with clients over his career as a clinician. Clients have reportedly described rejection as "knowledge that they were not loved and wanted by one or both parents" (Envoy, 1981).

Parental rejection may be assessed either by the subjective experience of the child or parent or by external measurement by observers looking in on the parent-child interactions. The focus of the proposed study aims to measure the construct of parental acceptance-rejection from the viewpoint of the child. This strategy was chosen based on the possibility that a child can experience rejection or feel unloved without consistent

parent reports or observation evidence. Rohner accounts for this idea in PART by the inclusion of undifferentiated rejection. Within this construct, an individual perceives themselves to “be unloved without necessarily feeling that their parents are either overtly hostile/aggressive toward them, or actively indifferent/neglecting” (Rohner, 1991, p. 2). Further, according to PART, parental rejection has most consistent and predictable effects on children where they perceive themselves as being rejected by their parent (Rohner, 1991).

Webster and Palmer (2000) conducted a study aimed at looking at the family background of women with bulimia nervosa (BN), anorexia nervosa (AN), both AN and BN (MIXED), depression (DEP), and controls (CON). The Childhood Experience of Care and Abuse Interview (CECA) was used to assess family background. Although the terminology differs, a rejection construct is implied in the measure’s assessment. For instance, the CECA is composed of 5 scales which include two quite similar to Rohner’s construct of rejection. The parental indifference scale reflects general neglect and a lack of interest and attention from the parents. A second scale, antipathy, is defined as a negative quality present in the parent-child relationship as subjectively experienced by the child such as dislike, coldness, or hatred. Both of these scales coincide with Rohner’s conceptualization which includes the scales of aggression/hostility, neglect/indifference, and rejection to measure perceived rejection from parents. In the Webster and Palmer (2000) study it was found that the indifference variable described above was statistically significant for the BN and MIXED groups and the antipathy variable was statistically significant for the MIXED group. Thirty-four percent of the bulimia participants and 40% of the MIXED group identified indifference as present in their parent-child relationship

growing up. Fifty percent of the MIXED group identified antipathy to be part of this relationship.

A study comparing the early family experiences of women with bulimia nervosa (n=30), women with major depression (n=15), and a group of normal controls (n=100) found bulimic women perceived both parents as more rejecting in childhood as compared to both major depressive and normal females (Studart, Laraia, Ballenger and Lydiard, 1990). Additionally, Dolan, Lieberman, Evans, and Lacey (1990) compared perceptions of family interactions between bulimic females (n=38) and a group of normal controls (n=40). Overall bulimic women were found to report a poorer relationship with their parents, perceiving their parents as inattentive and uninvolved. This perception may be incorporated into the rejection construct described by Rohner to be studied in the current project. Rohner's construction of rejection is made up of four factors including neglect/indifference, aggression/hostility, undifferentiated rejection (subjective feeling of rejection), and lack of warmth/affection.

The idea or construct of rejection is embedded into a number of instruments and studies, not always referred to as "rejection". Another example of this differential nomenclature is present within the Parental Bonding Instrument (PBI). The PBI aims to operationalize the relationship between parent and child as does Rohner, but it chooses different language and theory (attachment rather than socialization) to do so.

#### *Parent Acceptance-Rejection Framework*

Ronald Rohner developed a framework based on socialization theory, which he has called Parental Acceptance-Rejection Theory (PARTheory hereafter). PARTheory attempts to predict and explain significant antecedents, consequences of perceptions of

parental acceptance and rejection (Rohner, 1986). The notion of parental rejection and its hypothesized consequences have been studied throughout the twentieth century (Rohner & Nielsen, 1978).

Rohner has conceptualized a theory, which he has called PARTheory to capture the constructs of acceptance and rejection, which lie on the continuum of warmth. The continuum of warmth includes affection, support, caring, nurturance, and love, or lack of these features. Rejection (lack of parental warmth & affection) would lie on one end and acceptance on the other. Acceptance has been characterized as physical and verbal expressions of love from parents to child and rejection as dislike, disapproval, resentment, or indifference from parents toward children (Rohner 1986; 1991).

PART is a theory of socialization attempting to explain and predict consequences of both parental acceptance and rejection for development in children and adults (Rohner, 1991). Rohner and Britner (2002) found parental rejection tends to be an “excellent predictor of psychological and behavioral problems” by way of a meta-analysis. Conceptualized in four ways, parental rejection may include: 1) cold and unaffectionate, 2) hostile and aggressive, 3) indifferent and neglecting, and 4) undifferentiated rejecting (Rohner & Britner, 2002). The fourth category of “undifferentiated rejecting” is of particular interest as it refers to the perceptual piece, or *feeling* unloved without objective indicators (Rohner & Britner, 2002).

Rejection is manifested by parents in two primary ways, including hostility/aggression or indifference/neglect (Rohner, 1991). These manifestations include feelings, attitudes, or behaviors exhibited by parents toward their child(ren). Hostility, for instance, refers to feelings of anger or resentment toward the child. Alternatively,

indifference refers to a lack of concern or interest in a child, including ignoring children's bids for attention or remain remote or inaccessible to them (Rohner, 1991). PART states that either of these forms of parental rejection is hypothesized to induce feelings of unlovability and rejection in children.

Individuals who perceive themselves to be rejected are predicted to develop the personality dispositions of a) hostility, aggression, or problems with the management of both, b) dependence or defensive independence, c) impaired self-esteem, d) impaired self-adequacy and self-esteem, e) emotional unresponsiveness or instability, and f) have a negative worldview (Rohner & Britner, 2002; Rohner, 1991). A recent meta-analysis using adults in the U.S. and internationally demonstrated that the weighted mean effect size of the relation between the Adult Parental Acceptance-Rejection Questionnaire (PARQ) and the Adult Personality Assessment Questionnaire (PAQ) is .46 using a sample of 1,722 (Rohner & Britner, 2002). These results suggest that adults' recollections of childhood experiences with parental warmth (acceptance-rejection) explain approximately 21% of the variance in their current psychological adjustment.

According to PARTheory, individuals who perceived themselves as rejected have inherently different internal working models (mental representations of self and others) resulting in a trajectory down a different developmental pathway, often resulting in difficulty. Literature has demonstrated that when important affectional bonds are threatened, distorted, or broken, psychological needs become unmet, thereby triggering powerful emotions such as anxiety, insecurity and anger (Ward, Ramsay, Turnbull, Benedettini, & Treasure, 2000).

A revisitation to the concept of “looking glass self” within symbolic interactionism is helpful as it also arises as an assumption to PART. It states that individuals tend to view themselves as they imagine significant others view them. Therefore, if parents constitute arguably the most significant relationships in a child’s life and thereby are perceived by the child to reject he or she, it is likely that these children will define themselves as unworthy of love and have an overall negative self-evaluation (Rohner, 1991). Consequently, a child perceiving themselves as rejected will engage in behaviors such as seeking parental approval and attention, seeking physical contact and being overly dependent in an effort to remedy the rejection (Rohner, 1991). The results of prolonged perception of parental rejection is hypothesized through PART to facilitate less tolerance for stress, emotional instability, and susceptibility for various psychopathologies.

Also similar to the identity concept embedded within symbolic interactionism, PART postulates that children with clearer senses of self and the ability to depersonalize are better equipped to reject negative messages from parents (Rohner, 1991). Rohner differentiates between copers and non-copers whereby copers are able to depersonalize and deal more functionally with perceived rejection. However, PART does not clearly define what constitutes coping. The construct of coping often engenders images of strength and health. However, a variety of coping methods may be employed to deal with painful situations or experiences that are less than desirable for one’s health such as substance abuse or eating disorders. Therefore, the idea of coping being equated with higher functioning in the proposed study whereby disordered eating may be called upon as a consequence to parental rejection is intuitively inaccurate. Rather, a neutral



definition of coping is necessary to incorporate into the proposed study's hypotheses whereby coping may in fact be a reasonable result of parental rejection in the form of maladaptive behaviors, such as disordered eating.

Both PART and symbolic interactionism advocate for a phenomenological approach rather than a behaviorist one. With the assumption that human behavior is affected to a greater extent by their perception or definition, both theories favor a stance lending weight to subjective experience and interpretation rather than objectivity (Rohner, 1986; LaRossa & Reitzes, 1993). Therefore PART emphasizes the child's experience of his or her parent's warmth, hostility, or indifference.

Envoy (p. 34, 1981) links the presence of perceived parental rejection with the incorporation of psychological devices to assist in coping in the following quote,

"No matter how obscure the explanations of just how they had eventually come to know they were rejected, one point seemed indisputable. A substantial number of the rejected reported that, after they had finally recognized their rejection, for years they unknowingly employed one or more psychological devices to protect themselves from the unlovely realization that they had been rejected. These psychological, rejection-concealing devices were "defense mechanisms," which involved no aspect whatever of conscious deception or pretending. Rather, they were psychological tricks that these people had automatically and unconsciously used in order to shield themselves from the exceedingly distressing experience of rejection."

#### *Supporting PARTheory*

To date, studies have implicated parental rejection in the etiology of drug and alcohol abuse, schizophrenia, depression, conduct disorder, externalizing behaviors, delinquency, and more recently, binge eating disorder (Khaleque & Rohner, 2002; Rohner & Nielsen, 1978). Conceptually these symptoms may be viewed as preferred ways of coping when perceptions of rejection become overwhelming and lead to intolerable emotions. In comparing children indicating perceived rejection with groups of

controls, rejected children have been shown to evaluate themselves more negatively and be more dependent (Rohner, 1991).

The conceptualization of parental acceptance and rejection has an impressive presence in the literature. To date, 1,500 studies exist documenting the assertion that parental rejection is associated with varying forms of psychopathology, behavioral and psychological problems, substance abuse, attachment disorders, academic difficulties, and troubled personal relationships (Rohner, 2002). A number of these studies have documented correlations between parental acceptance and pro-social behavior, positive peer relationships, psychological well-being, and higher rates of life satisfaction and happiness.

Steinhausen and Winkler Metzke (2001) conducted a study to target general risk factors for mental disorders in an adolescent sample. The researchers found perceived rejection by parents to be a risk factor for both males and females, co-varying with problem behaviors as reported by the Youth Self Report (Steinhausen & Winkler Metzke, 2001). Another study has looked at perceived relational support as related to adolescent adjustment including psychological well-being, delinquency, and substance use (Scholte, van Lieshout, & van Aken, 2001). In this study, factor analyses were used to understand configurations of support, or lack thereof, that were related to difficult psychological adjustment. The findings concluded that perceiving low support from parents was present in each high-risk group of adolescents (Scholte, van Lieshout, & van Aken, 2001). One aspect of the relational support construct used was warmth versus hostility involving acceptance in the exchange between parent and child (Scholte, van Lieshout, & van Aken, 2001). This definition is similar to how Rohner operationalizes parental rejection,

lying on a continuum of warmth with affection, support and caring on one end labeled acceptance, and rejection on the opposite pole involving a lack of this affection, support, and caring (Rohner, 1986; 1991).

In an effort to display the universality of parental acceptance-rejection theory, PARTheory, Khaleque & Rohner (2002) conducted a meta-analysis utilizing fifteen studies for adult perceptions, both published and unpublished, looking at the relation between adult scores on the Parental Acceptance-Rejection Questionnaire (PARQ) and the Personality Assessment Questionnaire (PAQ). The mean weighted effect size of maternal perception was  $r=.46$  and  $r=.45$  for paternal perception indicating a moderate effect. To cross check this finding once more, a fail safe N was computed to discover how many additional studies would be needed to result in non-significant results. The fail safe N indicated that an additional 941 studies with non-significant results would be necessary to cancel the calculated effect size. Khaleque and Rohner (2002) draw the conclusion based on the meta-analytic results that increases in perceived parental rejection are positively associated with increases in psychological maladjustment. Furthermore, in reviewing both transcultural and intracultural studies focusing on both children and adult perceptions, a total of 43, the conclusion was drawn that no sample in the world has yet been studied where PARQ and PAQ failed to produce the expected positive correlations.

Several studies have attempted to better understand the relationship between the perception of parental rejection and specific psychopathology. Emotional adjustment, operationalized as an absence of anxiety and depression, in adolescence was studied through this lens. This particular study examined the direct and indirect associations

between perceived parental acceptance and emotional adjustment, with the inclusion of a third variable, perception of self-competence, hypothesized by the investigators to mediate the direct relationship (McCauley, Ohannessian, Lerner, von Eye, & Lerner, 1996). The direct path model, including parental acceptance predicting emotional adjustment, provided a good fit. The indirect path model, including perceived self-competence as a mediating variable, showed no statistically significant paths. In regards to the specific emotional adjustment outcome variable, the correlation between perceived maternal acceptance and depression was found to be significantly stronger for girls than for boys, again implicating a need for split measures of parental acceptance-rejection including maternal and paternal.

Another study looking at specific symptoms has been conducted by Campo and Rohner (1992) as they investigated the connection between parental acceptance-rejection to substance abuse. Findings included the substance abusing group felt significantly more rejected by both their fathers and mothers as compared to the group of non-substance abusers (Campo & Rohner, 1992). Additionally, the study found that perceived paternal and maternal acceptance-rejection was related significantly to psychological adjustment as reported using the Personality Assessment Questionnaire (Rohner, 1991). The results of this study advocate for the importance of a developmental perspective focusing on the long-term interaction effects of family dysfunction, perceived rejection, and psychological maladjustment in the etiology of substance abuse. Using the analyzed data, but recognizing that causation has not been achieved, the authors postulate that perceived rejection may spark maladaptive personality and behavioral characteristics that may

further provoke rejection on the part of the parent, which may eventually lead to substance abuse as a way of dealing with the emotional pain of perceived rejection.

Only one study to date has researched the effect of an individual's perception of parental acceptance or rejection on the occurrence of disordered eating. The results indicated individuals with binge eating disorder perceived both their mothers and fathers to be significantly more rejecting than a group of controls (Dominy, Johnson, & Koch, 2000). However, a within group finding emerged that revealed obese women with binge eating disorder reported more rejecting and less warm fathers than mothers. Using the model proposed by Campo and Rohner (1992) in their investigation with the connection between substance abuse and parental acceptance-rejection as a conceptual map, Dominy, et al. (2000) postulated that binge eating would constitute a logical result of the parental rejection process. Individuals may turn to one substance or another to decrease the intense psychological pain resulting from perceived parental rejection. In the case of binge eating disorder, food may be the substance of choice to numb this internal pain.

It is clear from the literature that although Rohner's PARTheory has been found useful in explaining numerous forms of maladjustment, it has yet to be empirically researched in the populations of eating disorders including anorexia and bulimia. The gap in literature pertaining to disordered eating individual's perceptions of their parents levels of acceptance or rejection is critical as it may be preventing the establishment of effective treatment models.

## CHAPTER 3

### Methodology

#### *Introduction*

A good deal of research has addressed the connection between the perception of parental acceptance- rejection and numerous emotional disturbances such as substance abuse, depression, anxiety, conduct disorder, binge eating disorder, and externalizing behaviors. The review of the literature suggests that individuals' perceptions of relationships with their parents play a significant role in the development of eating disorders. The proposed research focuses on perception of parental (maternal and paternal) rejection and individual's self-report of family functioning as variables that distinguish between individuals exhibiting disordered eating attitudes and behaviors and those without. Specifically, assessments were conducted to find whether the perception of parental acceptance-rejection and family functioning distinguish between individuals with disordered eating tendencies and non-symptomatic individuals.

As evidenced by the literature, a gap, and therefore an opportunity, exists in looking at the relationship between disordered eating symptomatology and the perception of parental acceptance and rejection. Using research and theory as a guide, the eating disorder literature is lacking in empirical attention paid to the interplay between Rohner's parental acceptance-rejection theory (Rohner, 1991) and the microsystemic processes involving behaviors, thoughts, and attitudes found in individuals' struggling with their relationship with food and their body. At this time, a quantitative, empirically-based study is necessary to find if a relationship between the variables of family functioning, parental rejection, and disordered eating exists.

In this chapter, the research questions and hypotheses will be revisited.

Conceptual and operational definitions of the study's predictor and outcome variables will be outlined, and variables will be introduced. The sampling procedure utilized in recruitment of participants will be discussed. Instrumentation for the project will be identified with each assessment being introduced complete with reliability and validity data. Both data collection and data analysis will be outlined for the project, with Chapter 4 being reserved for a more in-depth discussion of both, including results.

### *Research Questions & Hypotheses*

As noted in Chapter 1, the following research questions are addressed in this study:

#### Research question 1:

Does parental acceptance-rejection differ between individuals with disordered eating and those without?

#### Hypothesis 1:

Individuals presenting as disordered in their eating will perceive their parents as more rejecting than individuals without disordered eating symptoms.

#### Research question 2:

Does family functioning differ between individuals with disordered eating and those without?

#### Hypothesis 2:

Individuals presenting as disordered in their eating attitudes and behaviors will perceive their families to be less healthy in terms of family functioning, than individuals without disordered eating difficulties.

**Research question 3:**

**Does the presence of parental rejection predict disordered eating symptomatology?**

**Hypothesis 3:**

**Individuals indicating more parental rejection will exhibit greater degrees of disordered eating.**

**Research question 4:**

**Does the perception of unhealthy family functioning predict disordered eating symptomatology?**

**Hypothesis 4:**

**Individuals indicating unhealthy family functioning will exhibit greater degrees of disordered eating.**

**Research question 5:**

**Is maternal or paternal rejection a better predictor of disordered eating symptomatology?**

**Hypothesis 5:**

**Although it is hypothesized that individuals reporting higher levels of disordered eating will perceive both their mothers and father to be more rejecting than the non-eating disordered group (hypothesis 1), it is further hypothesized that individuals reporting disordered eating symptomatology will perceive their fathers to be more rejecting than their mothers.**



### *Conceptual Model*

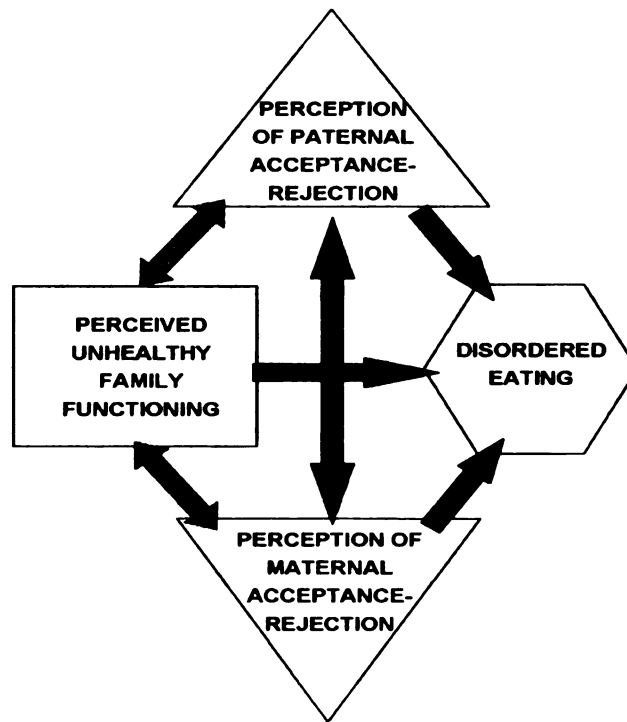


Figure 2 Conceptual Model

### *Conceptual and Operational Definitions*

- **Parental rejection**

**Conceptual:** Absence of parental warmth and affection; rejection lies on one end of a warmth continuum with acceptance at the other. Parental rejection is not a specific set of actions or behaviors displayed by parents, but rather the perception by the child that he or she is unloved.

**Operational:** For the purpose of this study, parental rejection was measured by the Parental Acceptance-Rejection Questionnaire (PARQ). Scores for the survey range from 60-240 for each parent (Rohner, 1991). A score of 240 represents the maximum perceived rejection score. Individuals scoring higher than 150 were interpreted as perceiving more rejection than acceptance from the rated parent. Scores between 140 and

149 reveal that respondents experience serious rejection, but not necessarily more overall rejection than acceptance (Khaleque & Rohner, 2002).

- **Parental acceptance**

**Conceptual:** Presence of parental warmth and affection, leading to a child's perception of self as loved and accepted by his or her parent(s); acceptance lies on the far end of the warmth continuum, representing the opposite pole of rejection. Parental acceptance may be evidenced through physical and/or verbal affection as perceived by the child as indicating love and caring from the parent(s).

**Operational:** For the purpose of this study, parental acceptance was measured using the Parental Acceptance-Rejection Questionnaire. A score of 60 represents the maximum perceived acceptance score. Individuals scoring less than 150 were interpreted as perceiving more overall acceptance than rejection from the rated parent (Rohner, 1991).

- **Family functioning**

**Conceptual:** Family functioning is a multidimensional construct defined as the accomplishment of essential functions and tasks by family members in a system (Grotevant & Carlson, 1989).

**Operational:** For the purpose of this study, family functioning was assessed using the Family Assessment Device (Epstein, Bishop, & Levin, 1978; Epstein, Baldwin, & Bishop, 1983; Kabacoff, Miller, Bishop, Epstein & Keitner, 1990). Seven dimensions are measured using the FAD and include: problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning. The composite score of the FAD's seven scales was used for the proposed study. A higher

score indicates more unhealthy perceptions of interaction within the family, noted as family dysfunction for the purposes of this study (Waller, 1994).

- **Disordered eating and non-disordered eating**

**Conceptual:** Eating attitudes and behaviors are conceptualized as lying on a continuum with asymptomatic eating on one end (non-disordered eating) and symptomatic on the other (disordered eating). Disordered eating is used in this study to describe an individual who engages in behaviors commonly associated with eating disorders such as food restriction, purging, preoccupation with food and appearance, and excessive exercising.

**Operational:** For the purpose of this study, presence of disordered eating was measured through the Eating Attitudes Test-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 was designed to measure both behavioral and attitudinal symptoms associated with the eating disorders of anorexia nervosa and bulimia nervosa. Individuals scoring 20 or higher are considered to be disordered in their eating attitudes and behaviors, while individuals scoring less than 20 are considered non-disordered.

### *Sampling Procedure*

The sample for this study consists of female undergraduate college students attending a large Mid-western university. Research has shown that prevalence rates of eating disorders are higher in college students than in other samples (Vohs, Heatherton, & Herrin, 2001; Gutzwiller-Jurman, 1999; Fairburn & Beglin, 1990), with this age group exhibiting higher rates of dieting, body dissatisfaction, and disturbed eating (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997). College women between the ages of 18 and 22 have higher rates of bulimia than those females younger, not in college, or over twenty-

one years (Gutzwiller-Jurman, 1999). A purposive, non-probability sampling procedure was used in an effort to target a non-clinical population more likely to exhibit disordered eating behaviors than the general population. The incidence of eating disorders on university campuses is strikingly high with studies showing prevalence rates for females ranging from 4 to 9% (Hesse-Biber, Marino, & Watts-Roy, 1999; Pope, Hudson, Yurglen-Todd, Hudson, 1984; Schwitzer, Bergholz, Dore, & Salimi, 1998). For women, weight and body dissatisfaction were found to be significantly higher during college as compared to post-college reports (Vohs, Heatherton, & Herrin, 2001). One study found one-quarter of female undergraduates reported their eating to be out-of-control (Koszewski, Newell, & Higgins, 1990).

Inclusionary criteria for the study required individuals to be enrolled as undergraduate students at Michigan State University, female, and between the ages of 18 and 25 years. In an effort to increase homogeneity in the sample, students not meeting these criteria were not included in the analysis.

A non-clinical sample is desirable for the present study as it is exploratory in nature, looking to better understand the relation between varying degrees of parental rejection and family functioning with eating behaviors and attitudes. A non-clinical sample provides a range of disordered eating behaviors with which to explore two groups: disordered eating and non-disordered eating. Additionally, a larger N was possible with a non-clinical versus a clinical sample, allowing for greater flexibility with statistical analyses.

Based on a study looking at the prevalence of eating attitudes and behaviors using the Eating Attitudes Test-26 in an undergraduate college sample, 20% of the females

scored above the EAT-26 cut-off score, indicating symptomatology associated with anorexia nervosa including dieting, bulimia, food preoccupation, and oral control (Nelson, Hughes, Katz, & Searight, 1999).

### *Variables*

Three primary independent variables in this study include perceived level of maternal acceptance-rejection, perceived level of paternal acceptance-rejection, and perception of family functioning. Both parental rejection-acceptance and family functioning variables are continuous scales allowing for ease in incorporation into a multiple regression model. Beyond the primary independent variables to be used in an abbreviated regression model, each of the composite variables, family functioning and parental acceptance-rejection, also include sub-scale variables. The inclusion of these sub-scales as replacement of the composite primary variables resulted in an expanded regression model, lending to the specificity of the model. For instance, the parental acceptance-rejection composite variable (both maternal and paternal) is made up of four sub-scale variables including warmth/affection, aggression/hostility, neglect/indifference, and undifferentiated rejection. Additionally, the family functioning variable as operationalized by the Family Assessment Device (Epstein, Bishop, & Levin, 1978) includes seven sub-scales, with general functioning being used as the primary independent variable for the abbreviated model discussed above. All seven sub-scale variables were incorporated into the expanded model to specify variable relationships. The six additional sub-scales from the Family Assessment Device (in addition to the general functioning scale) include problem solving, communication, roles, affective involvement, affective responsiveness, and behavior control. To summarize, an

abbreviated model included three primary independent variables and an expanded model was run with 15 sub-scale independent variables as a means of increasing model specificity.

The outcome, or dependent variable, was level of disordered eating as measured by the Eating Attitudes Test-26 (EAT-26). The EAT-26 incorporates a continuum, measuring a full range of eating behaviors and attitudes ranging from asymptomatic (non-disordered) to symptomatic (disordered). Researchers have viewed eating disorders as including anorexia nervosa and bulimia nervosa as an extreme end of a continuum based on an individual's relationship with food (Hesse-Biber, Marino, Watts-Roy, 1999; Striegel-Moore, 1992). A continuum for categorizing disordered eating has been selected for this study based on literature that has found partial syndromes to be two to five times more common than full diagnosis in adolescent females, ranging from 4% - 16% of the general population (Mussell, Binford & Fulkerson, 2000). Additionally, between 60-80% of college women are reported to engage in regular bingeing and other disturbed behaviors that do not qualify for full clinical diagnoses (Hesse-Biber, Marino, Watts-Roy, 1999). The importance for attention paid to partial syndromes or disordered eating has been supported by empirical evidence advocating for continuity between all levels than distinctly considering one relevant and the other not (Stice, Killen, Hayward, & Taylor, 1998).

In addition to offering the flexibility of a continuous variable of eating attitudes and behaviors, the EAT-26 also provides a cut-off whereby two groups may be created including eating disordered and non-eating disordered. This dichotomous variable was

useful for data analysis using t-tests, whereby the continuous nature of the variable will be incorporated into the multiple regression model.

### *Instrumentation*

**Demographic Questionnaire:** An investigator-derived demographic questionnaire was used to gather data on participants' gender, age, family income level, parents' relationship status, and ethnicity (see Appendix B). Demographic information gathered from the questionnaire will be used for descriptive purposes of the sample.

**Eating Attitudes Test-26:** The outcome variable examined within the proposed study consists of eating attitudes and behaviors. Presence of disordered eating was measured through the Eating Attitudes Test-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 does not yield a specific eating disorder diagnosis, but it has been deemed useful in detecting eating disturbances in non-clinical samples, making it particularly useful to the proposed study's aims. The EAT-26 differentiates individuals with anorexia and bulimia nervosa from controls; however, the symptomatic individuals score in the same range (Netemeyer & Williamson, 2001).

The EAT-26 was derived from the original EAT-40 using factor analysis going from seven scales and 40 questions to three scales and 26 questions. Both measures were found to be correlated at  $r=0.98$ , indicating that the 14 deleted questions were redundant and not necessary for maintaining the predictive power of the instrument. Cronbach's alpha, indicating the reliability and internal consistency of the EAT-26 has been shown to be 0.90 for the eating disordered group and 0.83 for the non-disordered eating group (Garner, et al., 1982).

Garner and Garfinkel (1979) constructed the EAT to reflect a range of anorexic behaviors and attitudes. Three factors, or subscales, make-up the EAT-26 and include dieting, bulimia and food preoccupation, and oral control (Garner, Olmsted, Bohr, & Garfinkel, 1982). In a sample of 160 female eating disorder patients with half being restrictors and the other half being classified as bulimic subtypes, no difference was found in the two groups' composite EAT-26 scores (Garner, Olmsted, Bohr, & Garfinkel, 1982). Therefore, individuals scoring above the specified cut-off for the instrument can be classified as disordered eating. The composite EAT-26 score will be used in the study rather than the three subscale scores.

The EAT-26 includes items that are rated on a 6-point Likert scale ranging from 1 indicating *always* and 6 indicating *never*. The EAT-26 is designed to measure both behavioral and attitudinal symptoms associated with the eating disorders of anorexia nervosa and bulimia nervosa. The authors report internal consistency (coefficient alpha) of .90 and a discriminant analysis resulting in 84% correct classification of known groups. Again, respondents are instructed to answer using a Likert scale with responses including always, usually, often, sometimes, rarely, and never. Sample items from the EAT-26 include:

- Am terrified about being overweight.
- Find myself preoccupied with food.
- Have gone on eating binges where I feel that I may not be able to stop.
- Have the impulse to vomit after meals.
- Feel extremely guilty after eating.

A cut-off score of 20 is suggested for determining symptomatic individuals versus non-symptomatic individuals (scores >20). The measure yields one composite score,





classifying an individual on a continuum of eating with scores above 20 classified as disordered. Therefore, a score of 19 would not be considered disordered using the EAT-26 developer's score operationalization and interpretation. Scoring for the six possible responses is as follows: always = 3; usually = 2; often = 1; sometimes, rarely and never = 0. One item (25) is reverse scored.

The cut-off score of 20 for the EAT-26 was derived from the cut-off established for the EAT-40, which was determined to be 30. A cut-off of thirty was used to eliminate false negatives using data that suggested 7% of the normals scored above the lowest active symptomatology score (Garner & Garfinkel, 1979). When the EAT-26 was created as a shorter version of the original EAT-40, the cut-off score was shifted to 20. Garner, et al. (1982) found this cut-off to correctly classify a similar proportions of disordered eating and normals when compared to the cut-off of 30 for the EAT-40. The EAT-26 cut-off score has been shown to identify approximately 15% of college students (Garner, et al., 1982). Discriminant function analysis was used to find the percentage of cases correctly classified to be 84.9% for the EAT-40 and 83.6% for the EAT-26 (Garner, et al., 1982).

This study conceptualized eating on a continuum from non-disordered to disordered, allowing for the flexibility of focusing on disordered eating as a larger category beyond the discrete diagnostic categories of anorexia nervosa and bulimia nervosa. Striegel-Moore, Silberstein, Frensch, and Rodin (1989) acknowledge that even at severity levels that fall considerably below diagnostic criteria for eating disorders, maladaptive dieting patterns and eating warrant attention.

Additional analyses are possible through utilization of the EAT-26's three subscales which include dieting, bulimia and food preoccupation, and oral control. These three subscales may be used as more specific dependent variables, evidencing behaviors correlating with eating disorder diagnoses. These analyses may be desirable for future research in this area as other researchers have often found females struggling with bulimic symptoms (bingeing and purging) to report greater family dysfunction including more distant, conflictual, and non-supportive (Humphrey, 1989; Johnson & Flach, 1985). Another study found patients with anorexia (purging subtype) were more likely to perceive family functioning as impaired than were either controls or restricting anorexic patients (Casper & Troiani, 2001). Considering the exploratory nature of the proposed study and the use of the EAT-26, which does not result in a clinical diagnosis, differential behaviors corresponding to specific diagnoses will not be incorporated into the study as dependent variables.

Parental Acceptance and Rejection Questionnaire (Adult – PARQ): Parental acceptance-rejection was measured by the adult version of the Parental Acceptance and Rejection Questionnaire (PARQ). The adult-version Parental Acceptance/Rejection Questionnaire (PARQ-F, father version; PARQ-M, mother version), a self-report measure developed by Rohner (1986, 1991), was designed to assess an individual's perception of acceptance-rejection by his or her parents during childhood, specifically during the ages of 7 through 12 years of age. Participants were provided instructions to complete the questionnaire for their biological mothers and fathers. Participants who were unable to follow these instructions due to no contact with their mother or father growing up did not complete the questionnaire. There was one participant who did not complete the

maternal acceptance-rejection questionnaire and an additional nine did not complete the paternal acceptance-rejection questionnaire. It is a 60-item, Likert-type inventory with possible responses including *almost always true*, *sometimes true*, *rarely true*, and *almost never true*. Sample items from the Parental Acceptance-Rejection Questionnaire include, “My Mother/Father”:

- Takes an active interest in me...
- Ignores me when I ask for help...
- Says nice things to me when I deserve them...
- Likes to spend time with me...
- Feels other children are better than I am no matter what I do...

Scores on the four subscales--parental warmth, hostility, neglect, and undifferentiated rejection--are combined to determine a composite score, which can range from 60 to 240 (midpoint = 150). A score of 60 represents the maximum perceived acceptance score and a score of 240 represents the maximum perceived rejection score. This composite score was utilized in the proposed study. Individuals scoring higher than 150 are interpreted as perceiving more rejection than acceptance from the rated parent. Scores between 140 and 149 reveal that respondents experience serious rejection, but not necessarily more overall rejection than acceptance (Khaleque & Rohner, 2002). In contrast, a score between 60 and 120 reveals a perception of substantial parental acceptance and love (Khaleque & Rohner, 2002). Participants will be asked to complete the instrument for both their mother and father.

Reliability studies (Rohner, 1991) have yielded Cronbach's alpha coefficients for the subscales ranging from .86 to .95. Mean test-retest reliability is .62 across time periods ranging from 3 weeks to 7 years (Khaleque & Rohner, 2002). To test the

concurrent validity of the PARQ, a modified version of the instrument was produced by inserting items from two already validated instruments including the Child's Report of Parent Behavior Inventory and Bronfenbrenner's Parental Behavior Questionnaire. These two measures were used as external, criterion measures. Results indicate that all four scales of the PARQ are significantly related to their respective validation scales at a level of  $p < .001$ . Specifically,  $r$  values for the PARQ's concurrent and criterion values are as follows: warmth/affection scale = .90; aggression/hostility scale = .43, neglect/indifference = .86, and rejection/undifferentiated = .81 (Rohner, 1991).

Family Assessment Device (FAD): The remaining predictor variable of perception of family functioning was assessed through the Family Assessment Device (FAD). This instrument is derived from the McMaster Model of Family Functioning, specifying the family dimensions of problem solving, communication, roles, affective responsiveness, affective involvement and behavior control (Epstein, Bishop, & Levin, 1978; Epstein, Baldwin, & Bishop, 1983; Kabacoff, Miller, Bishop, Epstein & Keitner, 1990).

The model's various six dimensions, excluding general functioning, are operationalized as follows. *Problem solving* refers to the family's ability to resolve problems that maintains effective family functioning. The exchange of information among family members is measured by the *communication* sub-scale. The *roles* dimension includes consideration of whether tasks are clearly and equitably assigned to family members. *Affective responsiveness* assesses the ability to respond to an event or situation with the appropriate quality and quantity of feelings (Epstein, Bishop, Ryan, Miller, and Keitner, 1993). An additional affective dimension, *affective involvement*,

measures the extent to which the family exhibits interest in and value activities of its' members. Finally, the *behavior control* subscale assesses how the family creates and maintains standards for its members' behavior.

The seven dimensions identified above make-up a 60-item inventory used to evaluate an individual's perception of their family, which takes approximately twenty minutes to complete (Miller, Bishop, Epstein, & Keitner, 1985; Epstein, Baldwin, & Bishop, 1983). The response format uses a four point Likert-scale ranging from strongly agree to strongly disagree (Epstein, Baldwin, & Bishop, 1983). A higher score indicates more unhealthy perceptions of interaction within the family (Waller, 1994). Sample items from the Family Assessment Device include:

- If someone is in trouble, the others become too involved.
- We resolve most everyday problems around the house.
- People come right out and say things instead of hinting at them.
- We avoid discussing our fears and concerns.
- Each of us has particular duties and responsibilities.

The FAD has been shown to discriminate between clinical and non-clinical families using a cut-off score of 2 on the general functioning scale to identify families with significant adjustment difficulties (Kabacoff, et al., 1990). Additionally, using clinician's ratings as criteria, cut-offs have showed acceptable rates of sensitivity (57-83%) and specificity (64-79%) (Miller, Epstein, Bishop, & Keitner, 1985). The following FAD cut-off scores have been found to discriminate significantly between families with a psychiatric illness and non-clinical families (Miller et al., 1985): problem solving 2.2, communication 2.2, roles, 2.3, affective responsiveness 2.2, affectiveness involvement

2.1, behavior control 1.9, and general functioning 2.0. Again, a higher score indicates more unhealthy perceptions of interaction within the family.

The Family Assessment Device has been demonstrated to have adequate internal consistency and test-retest reliability (Miller et al., 1985). Internal consistency across the seven scales using Cronbach alpha scores range from .72 to .92 (Grotevant & Carlson, 1989). Another study found alpha scores to range between .57-.83 for the non-clinical families across the seven scales and .69-.86 for psychiatric and medical families in their sample (Kabacoff, Miller, Bishop, Epstein, & Keitner, 1990). The *roles* sub-scale is the only dimension showing marginal reliability (.69 alpha for clinical samples and .57 for non-clinical samples).

In terms of concurrent validity, a discriminant analysis of individual measure scores predicted 67% of the non-clinical group and 64% of the clinical group with a significance level of  $p < .001$  (Epstein, Baldwin, & Bishop, 1983). Finally, coefficients of factor invariance ranged from .95-.99 across samples and factors. These indicators provide strong evidence for a stable and consistent factor structure across all three groups: psychiatric, medical and non-clinical (Kabacoff et al., 1990).

**TABLE 1: Abbreviated Model - Variables and corresponding Instruments**

<b>Variables</b>	<b>Level</b>	<b>Type</b>	<b>Instruments</b>
Eating Attitudes and Behaviors/Level of Disordered Eating	Continuous Categorical	Dependent	Eating Attitudes Test
Parental Acceptance-Rejection (maternal & paternal)	Continuous	Independent	Parental Acceptance and Rejection Questionnaire
Family Functioning	Continuous	Independent	Family Assessment Device

**TABLE 2: Expanded Model - Variables and corresponding Instruments**

<b>Variables</b>	<b>Level</b>	<b>Type</b>	<b>Instruments</b>
<b>Eating Attitudes and Behaviors/Level of Disordered Eating</b>	Continuous Categorical	Dependent	Eating Attitudes Test
<b>Warmth/Affection</b>	Continuous	Independent	Parental Acceptance and Rejection Questionnaire
<b>Aggression/Hostility</b>	Continuous	Independent	Parental Acceptance and Rejection Questionnaire
<b>Neglect/Indifference</b>	Continuous	Independent	Parental Acceptance and Rejection Questionnaire
<b>Undifferentiated Rejection</b>	Continuous	Independent	Parental Acceptance and Rejection Questionnaire
<b>General Functioning</b>	Continuous	Independent	Family Assessment Device
<b>Communication</b>	Continuous	Independent	Family Assessment Device
<b>Problem Solving</b>	Continuous	Independent	Family Assessment Device
<b>Roles</b>	Continuous	Independent	Family Assessment Device
<b>Affective Involvement</b>	Continuous	Independent	Family Assessment Device
<b>Affective Responsiveness</b>	Continuous	Independent	Family Assessment Device
<b>Behavior Control</b>	Continuous	Independent	Family Assessment Device

*Data Collection*

Following the attainment of permission by the University's Human Subjects Institutional Review Board to conduct the research project, the principal investigator established on-line access to the study's questionnaires through the Department of Psychology's Human Subjects Pool. Students enrolled in various undergraduate



psychology classes can log onto this site and complete any number of research projects activated for course credit. Additionally two instructors in the Department of Family and Child Ecology were approached about recruitment through their live courses. One instructor agreed to participate in the study, and further agreed to offer extra credit to any of her students who completed the study's questionnaires. The investigator offered no additional incentives to participants.

Two recruitment methods were chosen in order to obtain a more representative female student sample. All students who agreed to participate in the study were provided a list of professionals specializing in the treatment of disordered eating. This list included nutritionists, psychotherapists, and psychiatrists easily accessible to students for both geographical and financial reasons. The referral list was provided to all study participants rather than only "high risk" respondents based on EAT-26 scores, because of confidentiality measures employed. Students only provided their name for the purpose of informed consent. All other measures contain numerical coding, making contacting the participants impossible.

Participants were asked to complete five questionnaires including: 1) demographic information, 2) paternal-version parental acceptance rejection questionnaire, 3) maternal-version parental acceptance rejection questionnaire, 4) family assessment device, and 5) eating attitudes test. Time estimated to complete the entire battery of assessments was 1 hour with the majority completing the assessments in no longer than 40 minutes.

### *Data Analysis*

Two primary statistical procedures were used in analyzing the data including t-tests and multiple regression analysis. The SPSS program was used for data organization and analysis. SPSS is a commonly accepted statistical program within the social sciences.

**TABLE 3:**  
**Research Question with corresponding Hypothesis and Data Analysis**

<b>Research Question</b>	<b>Hypothesis</b>	<b>Data Analysis Technique</b>
1. Does parental acceptance-rejection differ between individuals with disordered eating and those without?	Individuals presenting as disordered eating will perceive their parents as more rejecting than individuals without disordered eating symptoms.	T-test
2. Does family functioning differ between individuals with disordered eating and those without?	Individuals presenting as disordered eating will perceive their families to be less healthy in terms of family functioning, than individuals without disordered eating symptoms.	T-test
3. Does the presence of parental rejection predict disordered eating symptomatology?	Individuals indicating more parental rejection will exhibit greater degrees of disordered eating.	Multiple Regression Analysis
4. Does the perception of unhealthy family functioning predict disordered eating symptomatology?	Individuals indicating unhealthy family functioning will exhibit greater degrees of disordered eating.	Multiple Regression Analysis
5. Is maternal or paternal rejection a better predictor of disordered eating symptomatology?	Paternal rejection is a better predictor of disordered eating symptomatology as compared to maternal rejection.	Multiple Regression Analysis

T-tests were used to address research questions 1 and 2. Difference in means between the disordered eating and non-disordered groups based on the independent variables were attained. It was hypothesized that the disordered eating group, established by using the cut-off of 20 on the EAT-26, would include higher parental rejection means and higher unhealthy family functioning means than the non-disordered eating group.

Multiple regression analysis were used to compute the amount of variance predicted by the independent variables on the dependent variable, level of disordered eating. Regression analysis was useful in determining a model offering the best fit with the identified independent variables. Research questions 3, 4, and 5 were addressed using multiple regression analysis.

The dependent variable in the model is the level of disordered eating measured by the Eating Attitudes Test. Throughout the project, this variable is referred interchangeably as disordered eating and eating attitudes and behaviors. The EAT allows for both continuous and categorical variable scales with the measures creators identifying the presence of disordered eating with scores above 20. For the purpose of the regression model however, the dependent variable will be used as having a continuous scale to measure levels of disordered eating with scores ranging from 0 – 79, with lower scores indicating normal eating attitudes or an absence of disordered eating and higher scores indicating more disordered eating behaviors and attitudes.

The first and second independent variables in the model are the parental acceptance-rejection variables as assessed using the paternal and maternal-versions of the Parental Acceptance/Rejection Questionnaire. Because a maternal and paternal version of this questionnaire was used, both variables were entered into the model in order to discover if one accounts for more variance than the other in explaining the dependent variable, disordered eating attitudes and behaviors.

The third independent variable in the model is family functioning as perceived by the participant and measured by the general functioning scale of the Family Assessment Device.

## CHAPTER 4

### Results

#### *Introduction*

In this chapter, sampling and data collection will be discussed first as a foundation for the study's methodology. The principal investigator specifies the data cleaning process and identifies the resulting sample size and characteristics of the sample according to demographics. Frequency distributions are provided for the sample based on each of the independent and dependent variables. Additionally, correlations and internal consistency scores are reported for the independent and dependent variables before moving on to the analysis to address the study's hypotheses. T-test results will be reported in response to hypotheses 1 and 2, and regression analyses were incorporated to address hypotheses 3, 4, and 5. Four total regression models will be reported in an effort to capture the complexity of the interpretation and specification of the models. Of these four there will be two abbreviated models (1 enter method and 1 step-wise), one expanded model, and one follow-up to the expanded model to check for any effects of collinearity.

#### *Data Collection and Sample Recruitment*

Between March of 2004 and May of 2004, the project's questionnaires were made available for university students enrolled in a variety of undergraduate psychology classes to access and complete via computer participation. The students were offered course credit for selecting and participating in the research study as established through the psychology department at Michigan State University. The total number of participants enrolling in the study via computer-based questionnaire completion was 1001. A second

method of subject recruitment included targeting students enrolled in an introductory Family and Child Ecology course. The investigator attended a class session, was invited to explain the study, and invited students to participate. The course instructor offered extra credit to students willing to participate. A total of 168 participants were accumulated using this recruitment method bringing the total sample size to 1169.

Three stages of data cleaning were used based on inclusionary criteria and incomplete data to omit 335 of the 1169 original subjects. Nine were omitted because they exceeded the study's predetermined age criteria, falling into a category of older than 25. An additional 320 male subjects were eliminated from analysis because they did not meet the inclusionary criteria of being female. And six subjects were omitted from analysis due to incomplete Eating Attitudes Tests, viewed by the researcher as necessary data because of its measurement of the study's dependent variable. A total of sample size of 834 resulted from the data cleaning process. This sample size is relatively large in comparing it to other research studies using non-clinical, college samples which have yielded subjects ranging from 101-249 in number (Thomson Ross & Gill, 2002; Twamley & Davis, 1999).

The total resulting sample was expected to be homogeneous because of inclusionary criteria established by the investigator (age, enrollment in university class, and sex) as well as the sampling parameters including a college campus. However, because two recruitment techniques were utilized to acquire the sample, analyses were conducted to ensure no differences exist. The participants were each given a code of "computer" or "classroom" to indicate how they enrolled in the study. A t-test was conducted to assess for potential differences between the two samples based on the

study's dependent variable, eating attitudes and behaviors as measured by the Eating Attitudes Test-26.

A total of 692 individuals enrolled in the study via computer recruitment and 142 enrolled through classroom recruitment. Results from Levene's test for equality of variances indicate that the samples have homogeneous variances ( $F=3.501$ ,  $p=.062$ ). The mean score on the EAT for group one (computer recruited) was 12.1156, whereas the mean score for group two (classroom recruited) was 10.6901. T-test analysis found this mean difference to be non-significant ( $t=1.307$ ,  $p=.192$ ). Based on this analysis the two recruitment samples were combined into one homogeneous sample for the study's data analysis.

#### *Demographic sample characteristics*

Frequency analysis was used to generate demographic data for the sample of 834 young women. The sample is predominately Caucasian (80.3%), between the ages of 18-19 (57%) and currently of Freshman status in college (50.1%). Ethnicity data indicate the second largest group represented is African-American, accounting for 7.9%, followed by Asian-Pacific Islander (4.9%) and Hispanic American (2.5%). A sizable portion of the sample (3.7%) either described themselves as "other" regarding ethnicity or were placed in this category by the investigator if two or more backgrounds were identified. Therefore, many of the subjects within the "other" ethnic group are bi- or multi-racial. According to student census data reported from Michigan State University's Office of the Registrar for Spring semester 2004, 75.6% of the enrolled study body were classified as Caucasian, 8.1% African American, 4.9% Asian American, 2.7% Hispanic and Mexican American, and .6% Native American. In comparing the study's sample to the overall

university sample, the ethnic group representations are nearly identical and the study sample can therefore be considered representative of the larger campus population based on this variable.

Nearly half (49.3%) of the sample came from families earning \$75,000 or more per year. Family structural data indicate that the majority (63.3%) of subjects' biological parents are married and living together with the next largest portion identifying their parents as divorced (19.1%). Seventy two percent of the sample reports having one or two siblings, 22 percent indicate 3-6 siblings and 6 percent report being an only child.

TABLE 4: Summary Demographic Characteristics of Sample

Demographics	Number	Percentage
<b>Age (years)</b>		
18-19	476	57
20-21	291	35
22-23	61	7.3
24-25	6	.7
<b>Year in college</b>		
Freshman	418	50.1
Sophomore	194	23.3
Junior	141	16.9
Senior	81	9.7
<b>Ethnicity</b>		
Caucasian	670	80.3
African-American	66	7.9
Asian American/Pacific Islander	41	4.9
Hispanic American	21	2.5
Native American	5	.6
Other	31	3.7
<b>Family income</b>		
\$15,000 or less	39	4.7
\$15,001-\$35,000	74	8.9
\$35,001-\$50,000	127	15.2
\$50,001-\$75,000	179	21.5
\$75,001 or above	411	49.3
Unknown	4	.5
<b>Biological parents' relationship</b>		
Married	528	63.3
Not married but living together	9	1.1
Separated	12	1.4
Divorced	159	19.1
Widowed	29	3.5
Never married	97	11.6

*Variable distributions across the sample*

Frequency data regarding the Eating Attitudes Test, used to measure the dependent variable in the study reveals 79 percent (n=659) scoring below 20, indicative



of non-disordered eating and 21 percent (n=175) scoring at or greater than 20, identifying individuals at high risk for development of an eating disorder. Possible EAT composite scores range from 0 to 79; the minimum score within the study's sample was 0 and the maximum score was 69. The mean EAT composite score was 11.87 (SD= 11.84) and the median was seven. The group scoring 20 or greater in this study will be referred to as disordered eating.

In an early standardization study completed by the EAT-26 developers, (Garner, Olmsted, Bohr, & Garfinkel, 1982) the EAT-26 cut-off score of 20 was shown to identify approximately 15 percent of college students. However, a more recent study identifies the proportion of disordered eating subjects more closely to this study, approximately 20 percent (Nelson, Hughes, Katz, & Searight, 1999). This increase in subjects scoring as higher risk for disordered eating may be a reflection of the increasing trend of eating disorders and extreme dieting behaviors on college campuses across the United States.

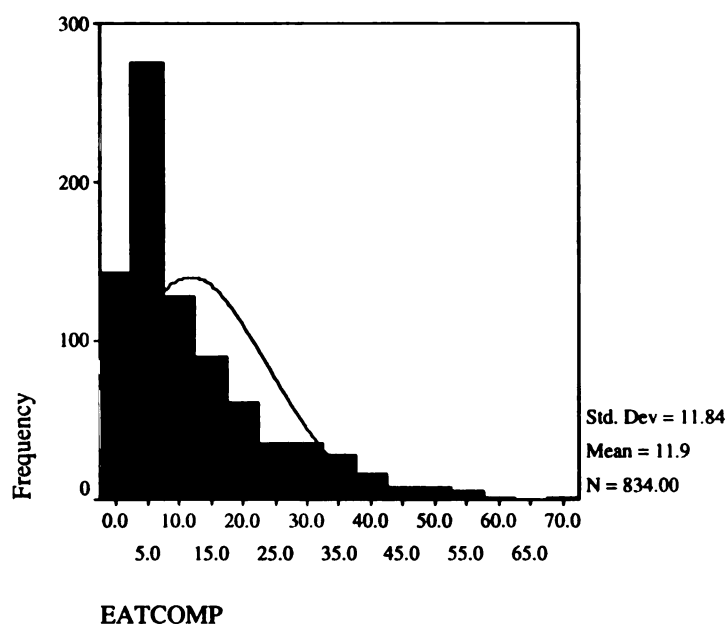


Figure 3: Distribution of EAT-26 Composite Scores

Internal consistency of the Eating Attitudes Test was estimated using Cronbach's alpha whereby  $\alpha = .9057$ . A standardization study by Garner and colleagues (1982) found the EAT-26 to demonstrate an alpha of 0.90. Analysis of specific questions included on the EAT-26 is included in the Clinical Implications section of Chapter 5.

The independent variable of family functioning was measured using the Family Assessment Device (FAD). The FAD is divided into "healthy" and "unhealthy" functioning items. "Unhealthy" functioning items were reverse scored to deliver consistency in interpretation. Although the FAD is made up of 7 sub-scales, only the General Functioning scale would be used for this study. The FAD does not recommend using a total composite score using all seven subscales. A composite score was derived by summing the items within the General Functioning scale and then dividing by the total number of items in the scale, creating a mean score. This mean score serves as the scale composite for each participant.

A possible range of 1.00 to 4.00 exists for the General Functioning composite scores with 1.00 indicating greater healthy functioning as perceived by the respondent and 4.00 indicating more unhealthy functioning (dysfunction) as perceived by the respondent. The "general functioning" sub-scale is the only one with a specified cut-off with previous research indicating a score of 2.00 or above identifies problematic family functioning; the higher the score, the more problematic the participant perceives her family's overall, or general functioning.

The General Functioning variable (GFAD) was recoded using the original continuous scale into a dichotomous scale to identify the ratio of problematic to non-problematic families perceived in the study. Non-problematic families were coded to

include participants who scored less than 2.00 on the General Functioning sub-scale of the FAD and problematic families were coded to include participants scoring 2.00 or greater on the GFAD. Nearly 67 percent (n=496) of the study sample perceived their families to be healthy or non-problematic with approximately 33 percent (n=338) perceiving their families to be unhealthy or problematic according to the General Functioning scale of the FAD (see Table 5 for frequency distribution of GFAD).

**TABLE 5: Frequency Data for the FAD General Functioning Scale**

	<b>Frequency</b>	<b>Percent</b>
<b>General Functioning (healthy) &lt;2.00</b>	496	59.47
<b>General Functioning (unhealthy) 2.00 or &gt;</b>	338	40.53
<b>Total</b>	834	100

The mean score on the GFAD was 1.859 (SD .580). The minimum score was 1.00 and the maximum score was 3.92. As evidenced by the histogram below, the distribution of scores was more normal than would have been predicted or expected. The mode for the GFAD was 2.00, indicating problematic family functioning. The ability of the FAD to clearly differentiate problematic from non-problematic families may be part of the reason for inconclusive results in the literature regarding its relationship with disordered eating symptomatology. Cronbach's alpha for the GFAD was demonstrated to be high with an alpha of .9226.

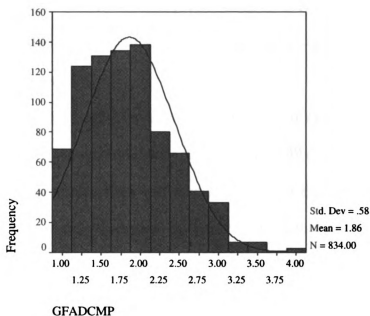


Figure 4: Distribution of FAD General Functioning Scores

Parental acceptance-rejection was divided into two independent variables including maternal and paternal scores from the same measure, the Parental Acceptance-Rejection Questionnaire (PARQ) developed by Ronald Rohner. Seven items from the neglect-indifference scale and the entire warmth-affection scale were reverse scored for the purpose of making all responses consistent with the scoring (high indicative of rejection; low indicative of acceptance). A total composite score was derived from the data as well as composites from the four subscales--parental warmth, hostility, neglect, and undifferentiated rejection for both mother and father.

The total raw composite score can range from 60 to 240 (midpoint = 150) using 60 items with Likert responses ranging from one to four. A score of 60 represents the maximum perceived acceptance score and a score of 240 represents the maximum perceived rejection score. This raw composite is useful for interpretation, however the PARQ scoring manual recommends transforming the raw scores into Z-scores for more

accurate accounting of the data variation, considering the four sub-scales different sizes. Z-scores were used to standardize the four subscales prior to summing them to form a total composite Z-score.

With a range of possible raw scores ranging from 60-240 and 150 indicating the recommended cut-off point, 95.6% of the sample scored 149 or below on the measure, indicating a high rate of maternal acceptance. Nearly five percent (4.4%) of the sample indicated maternal rejection with a raw composite score on the MPARQ of 150 or greater. Of the total sample of 834, there was one missing MPARQ. This individual completed the FPARQ and was therefore included in the data's analysis. Six individuals who did not complete either the FPARQ or the MPARQ were omitted from analysis. These individuals overlapped with those who chose not to complete the EAT-26.

Table 6: Maternal Parental Acceptance-Rejection Data: Raw and Z-scores

	<b>Maternal Acceptance- Rejection (Raw Score)</b>	<b>Maternal Acceptance- Rejection (Z-score)</b>	<b>Warmth- Affection Sub-scale (Z-score)</b>	<b>Aggression- Hostility Sub-scale (Z-score)</b>	<b>Neglect- Indifference Sub-scale (Z-score)</b>	<b>Undifferentiated Rejection Sub-scale (Z-score)</b>
<b>Mean</b>	89.906	-.1664	-.0264	-.0543	-.0270	-.0570
<b>Median</b>	80.000	-1.4217	-.4758	-.4466	-.2754	-.1870
<b>Std. Dev.</b>	26.4849	3.5594	.9770	1.0050	.9961	.9994
<b>Minimum</b>	60.00	-4.36	-1.2047	-1.1845	-1.1209	-1.4110
<b>Maximum</b>	225.00	17.66	5.3553	4.3501	4.7970	4.7089

Frequency distributions for both the raw score composite of the MPARQ and the Z-score composite of the MPARQ to assess for their relative similarity. Although Z-scores were calculated to standardize any variability among the four sub-scales, it was assumed that the histograms for the raw and Z-score composites would be similar. Charts 3 and 4 show these distributions with normal curves included, evidencing the expected similarity of the distributions.

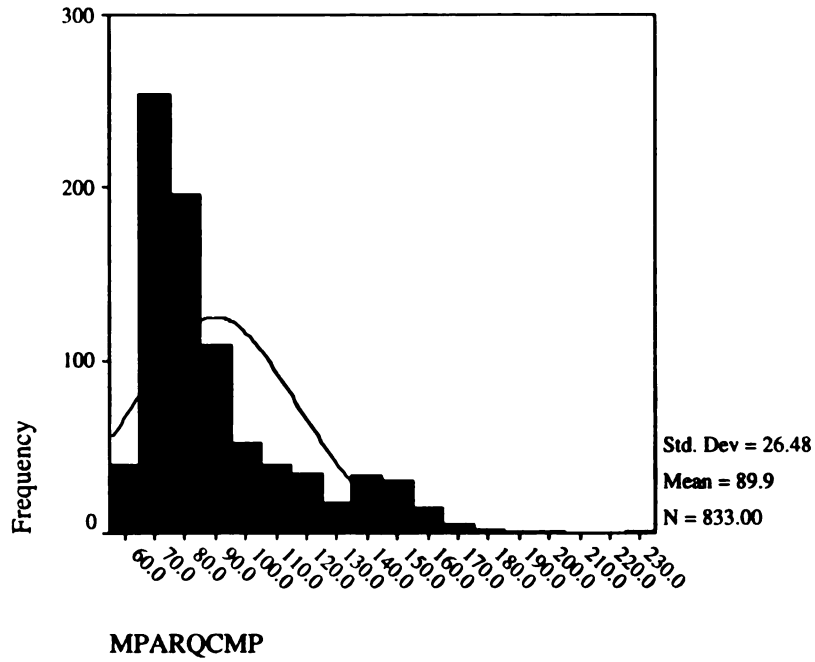


Figure 5: Histogram for Raw Composite of MPARQ

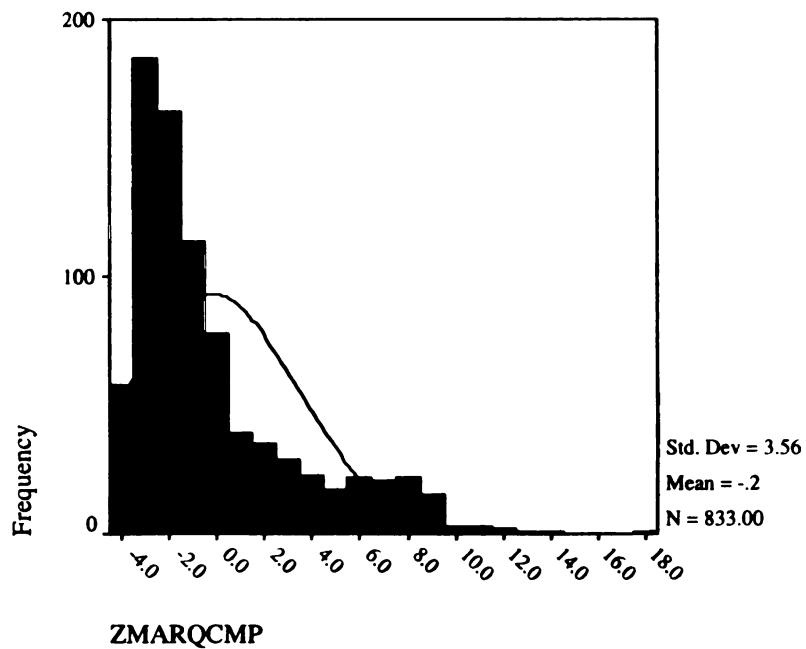


Figure 6: Histogram for Z-score Composite of MPARQ

Reliability measures to assess the internal consistency of the MPARQ and its four scales yielded satisfactory results. The raw scale scores were used in calculated these alphas. The 60-item MPARQ yielded an alpha of .9693. The four sub-scales internal consistency scores are as follows: Warmth-Affection  $\alpha = .9490$  with 20 items; Aggression-Hostility  $\alpha = .9234$  with 15 items; Neglect-Indifference  $\alpha = .9065$  with 15 items; Rejected-Undifferentiated  $\alpha = .7861$  with 10 items.

The paternal acceptance-rejection (FPARQ) scores showed greater dispersion than the maternal acceptance-rejection (MPARQ) scores, however this variability was accounted for by a small number of participants scoring higher on the FPARQ. Whereas with the MPARQ 95.6% of the sample scored 149 or below, 90.4% of the sample scored below 149 on the FPARQ. In looking closer at this data, two subjects scored above 220 on the MPARQ and three subjects scored above 220 on the FPARQ. Therefore the mean of the data was affected by the highest score of 234 on the FPARQ. Nearly ten percent of the sample indicated perceived paternal rejection, scoring 150 or greater on the FPARQ as compared to the 4.4 percent of the sample indicating perceived maternal rejection. Of the total sample of 834, there were nine missing cases for the FPARQ resulting in a sample of 825 to be analyzed.

Table 7: Paternal Parental Acceptance-Rejection Data: Raw and Z-scores

	Paternal Acceptance- Rejection (Raw Score)	Paternal Acceptance- Rejection (Z-score)	Warmth- Affection Sub-scale (Z-score)	Aggression- Hostility Sub-scale (Z-score)	Neglect- Indifference Sub-scale (Z-score)	Undifferentiated Rejection Sub-scale (Z-score)
<b>Mean</b>	96.3988	-.2384	-.0334	-.0920	-.0243	-.0887
<b>Median</b>	85.000	-1.3645	-.4064	-.3997	-.3233	-.3423
<b>Std. Dev.</b>	33.3901	3.4376	1.0105	.9685	1.0090	.9923
<b>Minimum</b>	60.00	-4.13	-.90477	-.93577	-1.1559	-1.4152
<b>Maximum</b>	234.00	14.27	3.3673	3.8885	3.9440	4.1282

As was evidenced with the MPARQ, the FPARQ's two total composite scores, both raw and Z-scores, are quite similar. For both the MPARQ and the FPARQ, Z-scores will be used for subsequent analysis addressing the study's research questions. Raw scores are more useful however in describing the response cut-offs and interpreting their meaning with the identified cut-off score of 150.

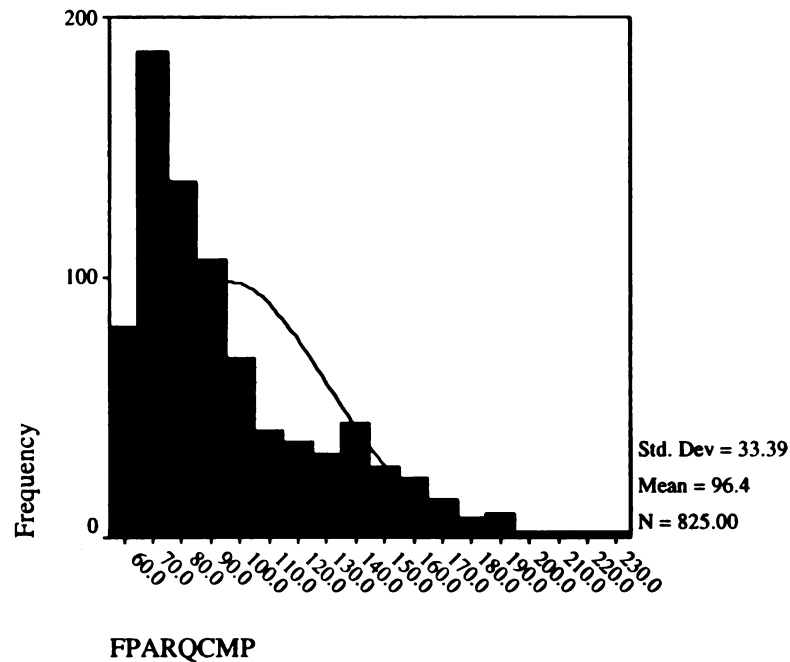


Figure 7: Histogram for Raw Composite of FPARQ



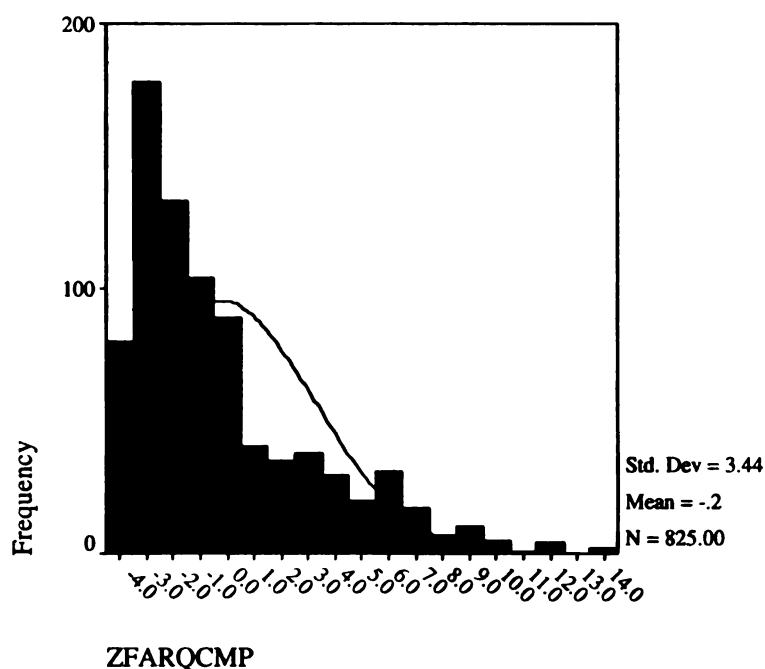


Figure 8: Histogram for Z-score Composite of FPARQ

Reliability measures to assess the internal consistency of the FPARQ and its four scales also yielded satisfactory results. The raw scale scores were used in calculated these alphas. The 60-item FPARQ yielded an alpha of .9708. The four sub-scales internal consistency scores are as follows: Warmth-Affection  $\alpha = .9729$  with 20 items; Aggression-Hostility  $\alpha = .9366$  with 15 items; Neglect-Indifference  $\alpha = .8831$  with 15 items; Rejected-Undifferentiated  $\alpha = .8163$  with 10 items.

### *Hypotheses*

Five primary hypotheses are addressed using the data in this study. Two hypotheses aim to clarify the differences between the disordered and non-disordered eating groups based on the independent variables of parental acceptance-rejection and family functioning. Independent sample t-tests were used to address the two hypotheses assessing for the level of difference between the disordered and non-disordered eating groups based on the independent variables of parental rejection and family functioning.

Multiple regression analysis will be used to clarify the predictive relationship between the independent variables and the dependent variable, eating attitudes and behaviors as measured by the EAT-26.

### Hypothesis 1

The first hypothesis states that there will be significant differences between disordered and non-disordered eating groups based on the variables of maternal and paternal rejection. Both maternal and paternal acceptance-rejection variables were used with the grouping variable of EATCUT, the dichotomous conversion of the continuous dependent variable from the EAT-26. The EATCUT variable includes two groups with 1.00 code representing non-disordered scores measured as  $< 20$  and 2.00 code representing disordered eating scores on the EAT-26 of 20 or  $\leq$ . Both raw scores and Z-scores are included in Table 8 for interpretation and comparison purposes. Statistics will be reported for hypothesis 1 using Z-scores as recommended by the scoring manual for the Parental Acceptance-Rejection Questionnaire.

The assumption of homogeneity of variance was not met in the analysis as evidenced by p-values not exceeding the .05 level. One likely contributor to this unmet assumption is the unequal sample sizes,  $n=659$  and  $n=651$  for group 1.00 (ZMARQCMP and ZFARQCMP) and  $n=175$  for both variable groups coded 2.00. Due to heterogeneity being present in the samples' variances, t-test analysis reported in Table 9 represents equal variances *not* assumed using SPSS.

The null hypothesis states that the disordered eating and non-disordered eating groups will *not* be significantly different based on the testing variable of maternal

acceptance-rejection ( $\mu_1 = \mu_2$ ). T-test results indicate that this null hypothesis be rejected as a significant difference exists between the groups' means ( $t = -3.691$ ,  $p = .001$ ).

G\*Power software program (Buchner, Erdfelder, & Faul, 1997) was used to conduct post hoc power analyses in order to identify effect sizes for both t-tests and regression analyses. For power analysis of the t-test based on the means of maternal acceptance-rejection between the disordered eating ( $n = 175$ ,  $\text{mean} = 96.63$ ) and non-disordered eating group ( $n = 658$ ,  $\text{mean} = 88.12$ ), resulted in an effect size of  $d = 0.33$ . Therefore, although the groups were indicated as significantly different using probability values, the incorporation of effect size makes the analysis interpretation more tenuous. A d-value of 0.33 is considered relatively small according to Cohen (1977). Cohen (1977) identifies effect size conventions for t-tests to include small = 0.20, medium = 0.50, and large = 0.80.

Paternal acceptance-rejection was then inserted as the test variable. As was found with the maternal variable, the null hypothesis is rejected ( $\mu_1 \neq \mu_2$ ) with significant differences between the disordered eating and non-disordered eating means using paternal acceptance-rejection ( $t = -3.415$ ,  $p = .001$ ). Power analysis for the paternal acceptance-rejection t-test between disordered eating ( $n = 175$ ,  $\text{mean} = 103.99$ ) and non-disordered eating group ( $n = 650$ ,  $\text{mean} = 94.35$ ), resulted in an effect size of  $d = 0.30$ . Again, although the p-value indicates statistical significance in the difference between the two groups, the effect size is notably modest.

**Table 8:**  
**Group Statistics for Parental Acceptance-Rejection Variables included in T-tests**

	<b>EAT-26 Cut-off</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Maternal Acceptance-Rejection Raw Composite</b>	1.00 2.00	658 175	88.1170 96.6343	25.5708 28.7665
<b>Maternal Acceptance-Rejection Z-score Composite</b>	1.00 2.00	658 175	-.4153 .7780	3.4241 3.8960
<b>Paternal Acceptance-Rejection Raw Composite</b>	1.00 2.00	650 175	94.3554 103.9886	32.0881 36.9563
<b>Paternal Acceptance-Rejection Z-score Composite</b>	1.00 2.00	650 175	-.4697 .6207	3.2777 3.8662

Note. EAT-26 Cut-off: 1.00= non-disordered (score <20 on EAT-26); 2.00=disordered eating (score 20 or < on EAT-26).

**Table 9:**  
**Homogeneity of Variance and T-test Analyses for Parental Acceptance-Rejection Variables**

	<b>Levene's Test for Equality of Variances</b>		<b>t-test for Equality of Means</b>		
	<b>F</b>	<b>Sig.</b>	<b>t</b>	<b>df</b>	<b>Sig. (2-tailed)</b>
<b>Maternal Acceptance-Rejection Raw Composite</b> Equal variances not assumed	11.76	.001	-3.561	251.870	.000
<b>Maternal Acceptance-Rejection Z-score Composite</b> Equal variances not assumed	11.68	.001	-3.691	250.038	.000
<b>Paternal Acceptance-Rejection Raw Composite</b> Equal variances not assumed	11.38	.001	-3.144	249.051	.002
<b>Paternal Acceptance-Rejection Z-score Composite</b> Equal variances not assumed	13.85	.000	-3.415	245.391	.001

## Hypothesis 2

The second hypothesis states that there will be significant differences between disordered and non-disordered eating groups based on the variable of general family functioning. The general functioning scale from the Family Assessment Device was used as the grouping variable for the test variable, EATCUT. As stated above, EATCUT is a categorical variable including two groups, non-disordered eating (1.00) and disordered eating (2.00).

Table 10:  
Group Statistics for General Family Functioning Variable included in T-test

	EATCUT	N	Mean	Std. Deviation
General Family Functioning	1.00	659	1.8180	.5589
	2.00	175	2.0157	.6300

Note. EAT-26 Cut-off: 1.00= non-disordered (score <20 on EAT-26); 2.00=disordered eating (score 20 or < on EAT-26).

Table 11:  
Homogeneity of Variance and T-test Analyses for General Family Functioning Variable

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
General Family Functioning Equal variances assumed	3.842	0.51	-4.047	832	.000

The null hypothesis for this research question states that the disordered eating and non-disordered eating groups will not be significantly different based on the testing variable of General Family Functioning ( $\mu_1 = \mu_2$ ). The significance level for both t-values is .001 with  $t = -4.047$  (equality assumption met) and  $t = -3.775$  (equality assumption unmet). Based on these statistics the null hypothesis is rejected. A significant difference

exists between the two groups' means based on general family functioning. Power analysis for the t-test comparing the means of the disordered eating ( $n=175$ ,  $\text{mean}=2.016$ ) and non-disordered eating group ( $n=659$ ,  $\text{mean}=1.818$ ) based on the general family functioning variable shows an effect size of  $d=0.358$ . Cohen (1977) identifies effect size conventions for t-tests to include small= $0.20$ , medium= $0.50$ , and large= $0.80$ .

### Hypotheses 3 and 4

Hypotheses three and four state the influences of the independent variables, maternal acceptance-rejection, paternal acceptance-rejection, and unhealthy family functioning on the outcome variable, eating attitudes and behaviors.

The first step in this analysis process included checking the presence of collinearity between these variables. The issue of multicollinearity is important to recognize and address when conducting multiple regression analyses. Multicollinearity is said to be present when two or more independent variables are strongly correlated with one another (McClendon, 1994; Schroeder, Sjoquist, & Stephan, 1986). Multiple regression methods assume the absence of perfect multicollinearity, whereby none of the independent variables be perfectly correlated with another independent variable. It is likely that some degree of multicollinearity is present in all regression analyses, since few independent variables are totally uncorrelated (Schroeder, Sjoquist, & Stephan, 1986). No single statistical test can determine whether or not the collinearity in the data is a problem (Schroeder, Sjoquist, & Stephan, 1986). Schroeder, Sjoquist, and Stephan (1986) suggest multicollinearity can be assessed by looking for high correlation coefficients between the variables to be included in the regression equation. Lewis-Beck (1980) recommends that

correlation coefficients of .8 or larger are particularly concerning, and often useful in diagnosing collinearity problems.

Table 12 shows the correlative relationships between maternal rejection (ZMARQCMP), paternal rejection (ZFARQCMP), and general family functioning (GFADCMP). As would be expected with social science instruments measuring various aspects of family dynamics, all of the independent variables co-vary to some degree. The strongest correlation is between the GFAD and the ZMARQCMP ( $r=.639$ ). This association is noted when interpreting the multiple regression model whereby the GFAD coefficient is dropped from the model using the step-wise method and ZMARQCMP is retained. Therefore, although correlations exist between the independent variables, they are considered modest enough (near  $r=.500$ ) to accept in the current analysis.

Table 12: Correlation Data for the 3 Primary Independent Variables

	<b>General Family Functioning</b>	<b>Maternal Acceptance- Rejection (Z-score)</b>	<b>Paternal Acceptance- Rejection (Z-score)</b>
<b>General Family Functioning</b>			
Pearson Correlation	1.000	.639**	.562**
Sig. (2-tailed)		.000	.000
N	834	833	825
<b>Maternal Acceptance- Rejection (Z-score)</b>			
Pearson Correlation	.639**	1.000	.528**
Sig. (2-tailed)	.000		.000
N	833	833	824
<b>Paternal Acceptance- Rejection (Z-score)</b>			
Pearson Correlation	.562**	.528**	1.000
Sig. (2-tailed)	.000	.000	
N	825	824	825

\*\* = Correlation is significant at the 0.01 level (2-tailed).

The three primary independent variables listed above are included in the small regression model used in the analysis. An expanded model has also been incorporated to reflect the four sub-scales present in the Parental Rejection-Acceptance Questionnaire as well as the seven scales represented in the Family Assessment Device. The abbreviated model includes three predictor variables and the expanded model employs fifteen predictor variables. Findings from these two models will be reported in an effort to gain further clarification regarding variable relationships. Correlations between the fifteen independent variables used in the expanded regression model is provided below in Table 17.

<b>Abbreviated Model Variables</b>	<b>Expanded Model Variables</b>
General Family Functioning	Family Problem-Solving
Maternal Acceptance-Rejection Composite	Family Communication
Paternal Acceptance-Rejection Composite	Family Roles
	Family Affective Responsiveness
	Family Affective Involvement
	Family Behavior Control
	General Family Functioning
	Maternal Warmth-Affection
	Paternal Warmth-Affection
	Maternal Aggression-Hostility
	Paternal Aggression-Hostility
	Maternal Neglect-Indifference
	Paternal Neglect-Indifference
	Maternal Undifferentiated Rejection
	Paternal Undifferentiated Rejection

**Figure 9: Abbreviated and Expanded Regression Models**

The normality of residuals assumption was assessed. This normality assumption was not met when using EATCOMP as the dependent variable. The scatterplot and normal p-p plot evidence the non-normality of residuals in Figures 10 and 11. However, when converting the outcome variable to a categorical variable (EATLOG), the assumption was met as evidenced by Figures 12 and 13. In weighing the value in meeting



this assumption versus retaining a continuous variable as the outcome measure, the project seems to gain more value more from linear regression than from logistic or binary regression analyses. Therefore it is noted that non-normality of residuals exists within the dataset.

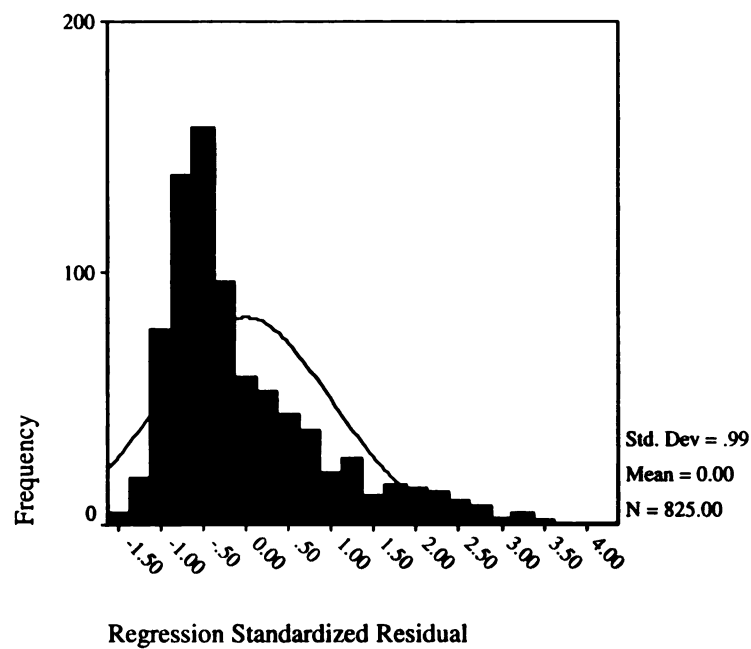


Figure 10: Histogram of Residuals using EATCOMP as Dependent Variable

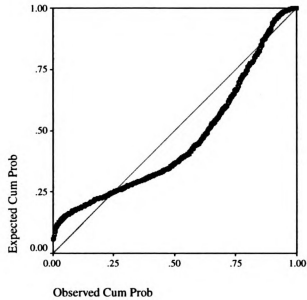


Figure 11: Normal P-P Plot of Residuals using EATCOMP as Dependent Variable

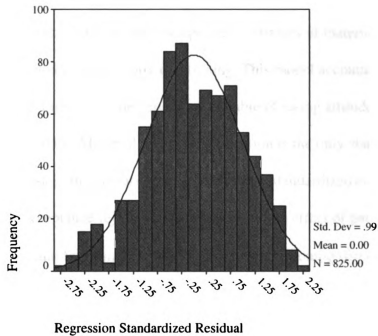
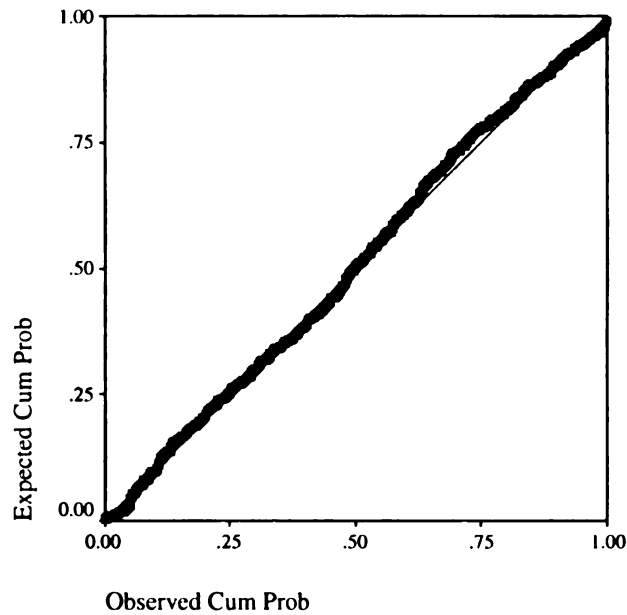


Figure 12: Histogram of Residuals using EATLOG as Dependent Variable



**Figure 13: Normal P-P Plot of Residuals using EATLOG as Dependent Variable**

The enter method in multiple regression analysis was used to examine the abbreviated data model with the three independent variables of maternal rejection, paternal rejection, and general family functioning. This model accounts for a modest 3.9 percent of the total variance in the dependent variable of eating attitudes and behaviors ( $R^2=.039$ , Adj.  $R^2=.036$ ). Maternal acceptance-rejection is the only statistically significant predictor in the model. In comparing the effects of the standardized coefficients in the model, maternal acceptance-rejection has nearly twice the effect of paternal acceptance-rejection ( $\beta=.070$ ) and four times the effect of family functioning ( $\beta=.034$ ). For every standard unit change in maternal acceptance-rejection, there will be a .126 increase in eating attitudes and behaviors. An increase in the dependent variable as measured by the EAT-26 signifies greater disordered eating. See Table 13 below for regression coefficient data.

The null hypothesis is rejected based on a p-value of .001, indicating that the model can be inferred to the population. The F-value is 11.203 for the model and is statistically significant. See Table 14 below for ANOVA statistics.

For power analyses of multiple regression, the effect size index  $f^2$  was used, reflecting the proportion of variance accounted for by some source in the population relative to the residual variance proportion (Buchner, Erdfelder, & Faul, 1997). Regression analysis effect size conventions include small=0.02, medium=0.15, and large=0.35. Results from the regression power analysis for the abbreviated regression model including three predictors (maternal acceptance-rejection, paternal acceptance-rejection, and general family functioning) with a sample of 823 equaled 0.041. This is a relatively small effect size according to Cohen (1977).

Table 13: Summary of Regression Analysis using the Enter Method for the Study's Abbreviated Model Predicting Eating Attitudes and Behaviors (N=823)

Variable	Unstandardized Coefficients		Standardized Beta
	B	Std. Error	
General Family Functioning	.693	.986	.034
Maternal Acceptance-Rejection (Z-score)	.425	.157	.126**
Paternal Acceptance-Rejection (Z-score)	.240	.148	.070

Note.  $R^2=.039$ . Adj.  $R^2=.036$ . \*\* $p<.01$ .

Table 14: Summary of ANOVA for Study's Abbreviated Model using Enter Method

	Sum of Squares	df	F
Regression	4579.166	3	11.203**
Residual	111720.0	820	
Total	116299.2	823	

Note. \*\* $p<.001$

The step-wise method was also incorporated into the regression analysis of the abbreviated model yielding results recommending the elimination of the GFAD variable from the model. Two models were derived using the step-wise method. The first model entered only the maternal rejection variable, omitting both paternal rejection and family functioning independent variables. In this case an  $R^2$  of .034 was achieved (Adj.=.033). As compared to the enter method model used above, the standardized regression coefficient value for maternal rejection increased from  $\beta=.126$  to  $\beta=.185$ . Additionally, the F-value for this model is larger (29.114) than both the F-value for the enter method abbreviated model ( $F=11.203$ ) above and the second step-wise model ( $F=16.568$ ) to be discussed next.

The second model incorporated into the step-wise regression analysis included the variables of maternal rejection and paternal rejection, again eliminating family functioning as a valid predictor variable. The tolerance value, a collinearity statistic, may provide some explanation why the GFAD predictor variable was eliminated from both models. The tolerance value ranges from zero to one with lower values indicating high multicollinearity. Tolerance is defined as the proportion of the independent variables' variance not shared with other independent variables. The tolerance value for GFAD in model 1 of the step-wise analysis was .578 and .512 for model 2. Previous correlations run among the independent variables indicated a moderate correlation between the maternal rejection and family functioning variables ( $r=.639$ ). It is likely that SPSS dropped the family functioning variable from the model in part due to this collinearity problem.

The R<sup>2</sup> value for model 2 rose slightly from .034 in model 1 (ZMARQCMF only) to .039 including both parental rejection variables. Interestingly when comparing the second model in step-wise regression to the previous enter method, the same R<sup>2</sup> values are attained (.039), however the step-wise method achieves this level without the family functioning variable present in the abbreviated enter model above. Therefore it may be concluded that family functioning (GFAD) is not a variable worthy of remaining in the model to predict disordered eating attitudes and behaviors.

Table 15: Summary of Regression Analysis using the Step-wise Method for the Study's Abbreviated Model Predicting Eating Attitudes and Behaviors (N=823)

Model	Unstandardized Coefficients		Standardized Beta
	B	Std. Error	
<b>1 Maternal Acceptance-Rejection</b>	.622	.115	.185**
<b>2 Maternal Acceptance-Rejection</b>	.480	.136	.143**
<b>Paternal Acceptance-Rejection</b>	.276	.139	.080*

Note. Model 1 (ZMARQCMF only). R<sup>2</sup>=.034. Adj. R<sup>2</sup>=.033. Model 2 (ZMARQCMF & ZFARQCMF). R<sup>2</sup>=.039. Adj. R<sup>2</sup>=.036. \*p<.05. \*\*p<.001.

Table 16:  
Summary of ANOVA for Study's Abbreviated Model using Step-wise Method

Model	Sum of Squares	df	F
<b>1 Regression</b>	3978.280	1	29.114**
<b>Residual</b>	112320.9	822	
<b>Total</b>	116299.2	823	
<b>2 Regression</b>	4511.746	2	16.568**
<b>Residual</b>	111787.4	821	
<b>Total</b>	116299.2	823	

Note. Model 1 (ZMARQCMF only). Model 2 (ZMARQCMF & ZFARQCMF). \*\*p<.001

In addition to the abbreviated regression analyses used above, including the three primary independent variables of maternal rejection, paternal rejection, and family

functioning, an expanded model was also used in order to clarify the influence of particular predictor variables on the outcome variable. The expanded model removes the PARQ total composite scores for both mother and father, replacing them with the four separate sub-scale scores that are combined to create the total composite. The expanded model also includes the additional six sub-scales from the Family Assessment Device, beyond the general functioning score included in the abbreviated model. A total of fifteen predictor variables are therefore present in the expanded model as compared to the three in the abbreviated model. It is noted that the  $r^2$  value will increase with the addition of variables. The purpose of the expanded model was not to achieve a greater variance accounted for, but rather to specify the most influential coefficients on the outcome variable.

Multiple regression analyses using the expanded model indicate specifications not available through the abbreviated model because of the reliance on total composite scores. The expanded model includes all seven of the Family Assessment Device sub-scales as well as the four sub-scales within the Parental Acceptance-Rejection Questionnaire for both mother and father, totaling fifteen independent variables. The four sub-scales for the Parental Acceptance-Rejection Questionnaire consist of Warmth/Affection (WA), Aggression/Hostility (AH), Neglect/Indifference (NI), and Undifferentiated Rejection (RU). The seven sub-scales for the Family Assessment Device include general functioning, communication, roles, problem solving, affective involvement, affectiveness responsiveness, and behavior control.

Table 17 outlines Pearson correlation coefficients for the 15 independent variables included in the model to check for collinearity. The majority of the correlations range

from .2 to .6. The highest correlations are shown between general family functioning and problem solving ( $r=.777$ ), affective responsiveness and general family functioning ( $r=.789$ ), maternal warmth and maternal neglect ( $r=.845$ ), paternal warmth and paternal neglect ( $r=.854$ ) maternal aggression/hostility and maternal rejection ( $r=.859$ ), and paternal aggression/hostility and paternal rejection ( $r=.878$ ). As was highlighted above, the four sub-scales of the Parental Acceptance-Rejection Questionnaire (warmth and neglect; aggression and rejection) could likely be scaled down to two scales based on the high correlations found in this study.



Table 17:  
Correlation Matrix for Study's Independent Variables

	Prob. Solving	Comm.	Roles	Affect Resp.	Affect Invol.	Behav. Control	Gen. Func.	Mother Warm.	Father Warm.	Mother Aggr.	Father Aggr.	Mother Negl.	Father Negl.	Mother Rel.	Father Rel.
Prob. Solving	1.000	.703	.548	.639	.452	.453	.777	.510	.424	.380	.315	.437	.401	.320	.278
Comm.	Person r N	.703	.575	.669	.515	.432	.805	.496	.397	.383	.354	.460	.384	.349	.293
Roles	Person r N	.548	.575	.507	.612	.671	.713	.493	.396	.486	.392	.531	.451	.456	.404
Affect Resp.	Person r N	.639	.669	1.000	.563	.458	.789	.558	.430	.440	.412	.511	.440	.417	.398
Affect Invol.	Person r N	.452	.515	.612	1.000	.484	.648	.433	.277	.476	.406	.510	.423	.447	.318
Behav. Control	Person r N	.453	.432	.458	.484	1.000	.541	.389	.280	.332	.238	.436	.345	.328	.227
Gen. Func.	Person r N	.777	.805	.713	.789	.648	1.000	.640	.499	.550	.478	.595	.510	.504	.453
Mother Warm.	Person r N	.510	.496	.493	.433	.389	.640	1.000	.431	.685	.380	.845	.423	.641	.372
Father Warm.	Person r N	.424	.397	.386	.430	.277	.280	.431	1.000	.295	.519	.362	.854	.231	.508
Mother Aggr.	Person r N	.380	.393	.440	.476	.332	.550	.685	.295	1.000	.511	.702	.375	.859	.483
Father Aggr.	Person r N	.315	.354	.392	.412	.238	.478	.380	.519	.511	1.000	.440	.607	.501	.878
Mother Negl.	Person r N	.401	.394	.451	.417	.348	.510	.423	.854	.375	.607	.447	1.000	.318	.603
Father Negl.	Person r N	.320	.354	.398	.451	.328	.504	.641	.231	.859	.501	.672	.318	1.000	.559
Mother Rel.	Person r N	.278	.349	.377	.382	.227	.453	.372	.508	.483	.878	.405	.603	.559	1.000
Father Rel.	Person r N	.278	.349	.377	.382	.227	.453	.372	.508	.483	.878	.405	.603	.559	1.000

Note: All correlations are statistically significant at a p-value of .001.

The predictive ability of the model is enhanced somewhat with the incorporation of the new variables as evidenced by an  $R^2$  of .089 (Adj.  $R^2=.072$ ). The F-value for the model decreased from 11.203 to 5.268 (however both are significant at  $p=.001$ ). Perhaps most useful with the expanded model is the enhanced ability to clarify what factors within the maternal acceptance-rejection variable contribute most to the prediction of disordered eating as well as investigating further impact by additional Family Assessment Device variables incorporated.

The effect size calculated for the expanded model using 15 predictors including sub-scale variables from the three primary variables for a sample of 823 reached  $f^2=.098$ . Regression analysis effect size conventions include small=0.02, medium=0.15, and large=0.35. The  $f^2$  value for this model approaches a medium effect size.

According to the regression coefficients in Table 18, maternal warmth/affection ( $\beta=-.213^{**}$ ), family problem-solving ( $\beta=-.161^{**}$ ), and family behavior control ( $\beta=.100^*$ ), are significant in the specified model in predicting disordered eating.

Table 18: Summary of Regression Analysis using the Enter Method for the Study's Expanded Model Predicting Eating Attitudes and Behaviors (N=823)

Variable	Unstandardized Coefficients		Standardized Beta
	B	Std. Error	
<b>Family Problem Solving</b>	-4.155	1.433	-.161**
<b>Family Communication</b>	-.588	1.409	-.025
<b>Family Roles</b>	-.871	1.584	-.031
<b>Family Affective Responsiveness</b>	.234	1.097	.012
<b>Family Affective Involvement</b>	1.627	1.184	.065
<b>Family Behavior Control</b>	2.760	1.286	.100*
<b>General Family Functioning</b>	3.391	1.832	.165
<b>Maternal Warmth-Affection</b>	.271	.093	-.213**
<b>Paternal Warmth-Affection</b>	-.0352	.059	-.042
<b>Maternal Aggression-Hostility</b>	.140	.108	.096
<b>Paternal Aggression-Hostility</b>	-.0274	.101	-.002
<b>Maternal Neglect-Indifference</b>	.201	.121	.119
<b>Paternal Neglect-Indifference</b>	.0705	.091	.058
<b>Maternal Undifferentiated Rejection</b>	.169	.183	.069
<b>Paternal Undifferentiated Rejection</b>	.0989	.171	.046

Note.  $R^2=.089$ . Adj.  $R^2=.072$ . \* $p<.05$ . \*\* $p<.01$ .

Table 19: Summary of ANOVA for Study's Expanded Model using Enter Method

	Sum of Squares	df	F
<b>Regression</b>	10359.829	15	5.268**
<b>Residual</b>	105939.3	808	
<b>Total</b>	116299.2	823	

Note. \*\*p<.001

As a follow-up to the expanded regression model, where 15 independent variables were used as predictors, another regression model was run incorporating only those variables showing significance in the expanded model. These significant variables included family problem-solving, family behavior control, and maternal warmth-affection. The purpose for running the follow-up regression analysis to the expanded model was to explore the potential impact of collinearity on the variables.

Table 20: Summary of Regression Analysis for the Study's Follow-up Model

Variable	Unstandardized Coefficients		Standardized Beta
	B	Std. Error	
<b>Family Problem Solving</b>	-2.037	1.075	-.080
<b>Family Behavior Control</b>	4.682	1.073	4.363**
<b>Maternal Warmth-Affection</b>	.0766	.051	.061

Note. R<sup>2</sup>=.030. Adj. R<sup>2</sup>=.027. \*\*p<.001.

Table 21: Summary of ANOVA for Study's Follow-up Model using Enter Method

	Sum of Squares	df	F
<b>Regression</b>	3513.118	3	8.573**
<b>Residual</b>	113241.0	829	
<b>Total</b>	116754.2	832	

Note. \*\*p<.001

The only variable to be statistically significant in this follow-up model was family behavior control ( $\beta=4.363^{**}$ ). Another notable change between the expanded model and the follow-up model is the sign change evident in the maternal warmth-affection variable.

The expanded model showed the maternal warmth-affection variable to have a negative correlation coefficient ( $\beta = -.213$ ), indicating an unsubstantiated relationship with disordered eating according to academic literature, whereby as maternal warmth increased, so to did disordered eating. The follow-up model indicates the maternal warmth-affection variable to not only change signs from negative to positive, but also shows it as non-significant in the model.

The effect size calculated for the follow-up model using 3 predictors including family problem solving, family behavior control, and maternal warmth-affection for a sample of 832 reached  $f^2 = 0.031$ , a small effect size according to Cohen (1977).

Now that the multiple regression analyses have been reported, it is appropriate to address the hypotheses stated earlier in the chapter. Hypothesis 3 states the presence of parental rejection predicts disordered eating symptomatology. The relative impact of parental rejection (both paternal and maternal) in predicting disordered eating is shown to be small, with an  $r^2$  value of .039 ( $F = 16.568^{**}$ ). The null hypothesis is rejected as statistical significance is reached to support the prediction of both paternal and maternal rejection account for 3.9% of the variance in the outcome.

Hypothesis 4 discusses the relative impact of general family functioning on eating attitudes and behaviors. In both the abbreviated and expanded regression models, general family functioning was not shown statistically significant. When utilizing the step-wise regression method, general family functioning was eliminated from the model altogether.

Other sub-scales from the Family Assessment Device, measuring different aspects of family functioning were found to be significant. Most notably, family problem-solving and family behavior control emerged in the expanded regression model as

significant. Family behavior control was the only variable in the follow-up model to surface as significant.

#### Hypothesis 5

The final hypothesis aims to define the relative impact of maternal and paternal rejection on disordered eating symptomatology. Essentially this hypothesis focuses on which of the parental variables is more effective at predicting the outcome variable. It seems sufficient evidence exists in the current data set to support drawing the conclusion that maternal acceptance-rejection is more effective overall. The maternal acceptance-rejection variable was statistically significant and showed the highest standardized regression coefficients in both abbreviated regression models ( $\beta=.126$  enter method and  $\beta=.185$  step-wise method). The step-wise regression method, using the abbreviated variable set, factored out maternal acceptance-rejection as the primary influential variable in the model, with paternal acceptance-rejection contributing additional variance in the second step.

The expanded model showed a lack of statistical significance for any of the paternal variables. Further, this expanded model indicated the maternal variable of warmth/affection was most predictive of disordered eating. However, the follow-up model indicated that the maternal warmth-affection variable was no longer significant when added to the model with family behavior control and family problem solving.

Therefore, based on three of the four regression models run in this study, the maternal acceptance-rejection is more effective at predicting disordered eating than paternal acceptance-rejection. None of the regression models run in the analyses found

paternal acceptance-rejection to be more significant as a predictor compared to maternal acceptance-rejection.

## CHAPTER 5

### Discussion

#### *Introduction*

Bruch (1974, p. 34) states that a “preoccupation with food may appear as helpless, dependent clinging to parents, or as hostile rejection of them.” A wealth of studies have examined this “dependent clinging” phenomenon as described by Minuchin and associates (1978) as enmeshed or having boundary difficulties. This particular study looked at the second contention in Bruch’s quotation, focusing on the predictive relationship between the perception of parental acceptance-rejection and perception of family functioning and the presence of disordered eating symptoms.

Young women at risk for developing an eating disorder are operationalized for the purpose of this study as those scoring 20 or greater on the Eating Attitudes Test. This at-risk population makes up the most commonly seen disordered eating group, consisting of less severe problems centering around weight preoccupation, body dissatisfaction, eating rules, and compensatory behaviors (Schwitzer, Bergholz, Dore, & Salimi, 1998). Recent studies indicate 6% of undergraduate women struggle with diagnosable eating disorders, whereas a larger 25%-40% of this population face moderate problems, not reaching full diagnosis (Koszewski, Newell, & Higgins, 1990; Schwitzer, et al., 1998).

In previous research, the 50<sup>th</sup> percentile of a female group of university students received a score of 6 on the EAT-26 with the mean score of the subjects being 9.9 (Garner et al., 1982). The current study data indicates the median score to be 7.0 with the mean score being 11.87 for the female sample surveyed. The current study found 21 percent of the sample qualifying as disordered eating according to the cut-off established



by Garner on the EAT-26. Walther (1994) also found a large percentage of subjects having EAT-26 scores above the established cut-off in a study of 354 female university students (23.4%).

### *Overview of Findings*

In comparing the disordered eating and non-disordered eating groups in this cross-sectional study as differentiated by the EAT-26, it was found that statistically significant differences exist between the two groups based on the variables of parental acceptance-rejection and family functioning. The disordered eating group perceived their family to be significantly more unhealthy in their functioning according to the general functioning scale from the Family Assessment Device. The disordered eating group also perceived both their mothers and fathers to be significantly more rejecting than the non-disordered eating group based on the Parental Acceptance-Rejection Questionnaire.

In considering the entire sample of over 800 female college students, the variables with the greatest impact on the dependent variable of disordered eating included maternal acceptance-rejection, specifically maternal warmth/affection, family problem solving, and family behavior control.

## *Conceptual Models*

### Original Conceptual Model

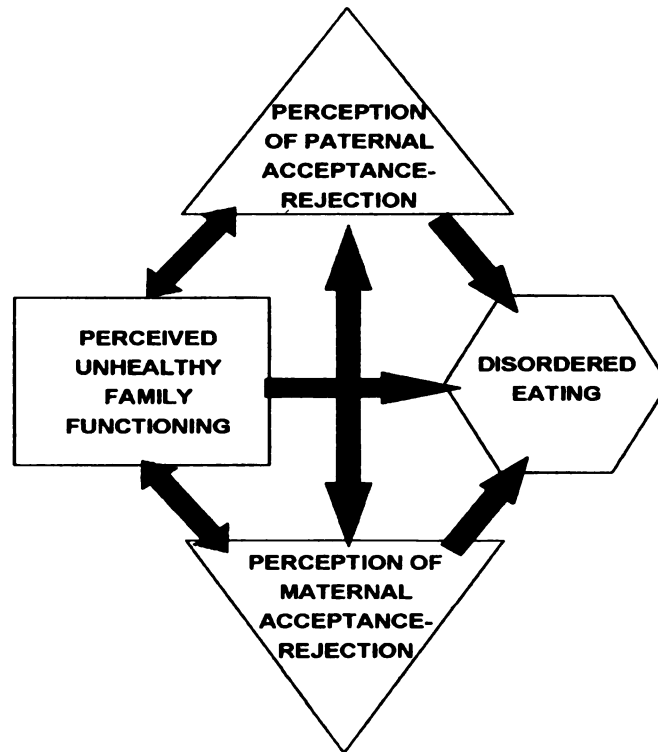


Figure 2: Conceptual Model

The original conceptual model incorporated the three primary independent variables, the dependent variable, and the relationships between all variables in the model using directional and shaded arrows. The darker the arrow, the stronger the relationship between the variables in the model. Therefore, according to the model presented above, there was expected to be some collinearity between the independent variables, with the correlation between maternal and paternal acceptance-rejection being stronger than between family functioning and either of the parent acceptance-rejection variables. Existing academic literature supported the presence of darker arrows in the model directed from each of the independent variables to the dependent variable, disordered

eating. Using recent literature differentiating the effects of mother and father variables on disordered eating, it was hypothesized that paternal acceptance-rejection would show a stronger relationship with disordered eating than maternal acceptance-rejection.

#### Revised Conceptual Model

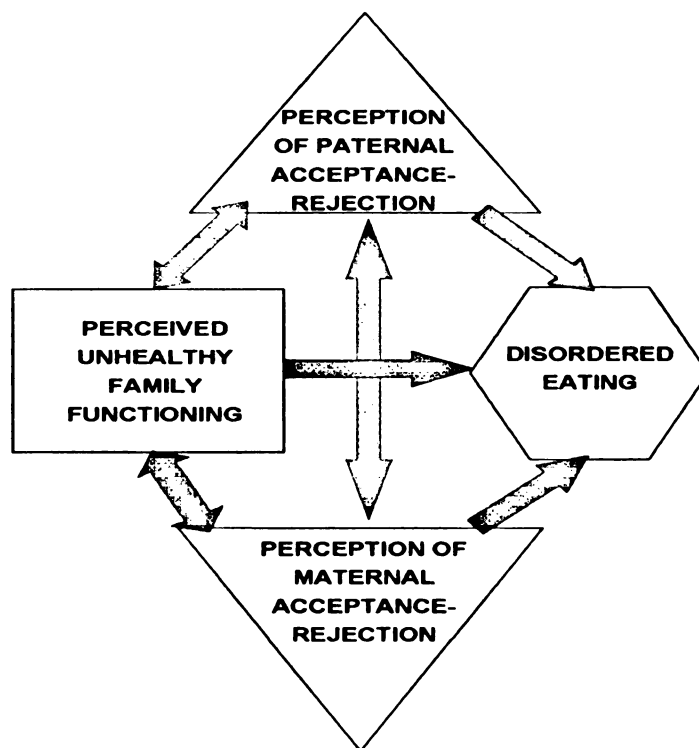


Figure 14: Revised Conceptual Model

The revised conceptual model reflects findings presented in chapter 4. There were correlations between all of the independent variables; however, in contrast to the original conceptual model, the strongest correlation was between the family functioning and maternal acceptance-rejection variables. Multiple regression analyses using the three primary independent variables, general family functioning, maternal acceptance-rejection, and paternal acceptance-rejection, led to the finding that the strongest relationship exists between the maternal acceptance-rejection variable and disordered

eating. The expanded and follow-up regression models support the inclusion of family functioning as an influential predictor when operationalizing it through problem-solving and behavior control variables. Therefore, the independent variables in the conceptual model above which serve as most influential include maternal acceptance and family functioning. Paternal acceptance-rejection did not show significant in any regression model run, therefore its minimal relationship to the dependent variable is indicated with a light gray arrow.

### *Evaluation of Research Questions*

Five research questions were outlined for the current study based on relationships between the independent variables of maternal acceptance-rejection, paternal acceptance-rejection, and family functioning with the dependent variable, eating attitudes and behaviors. These research questions will each be addressed with supporting data and literature below.

#### Research question 1

Research question 1 asks, “Does parental acceptance-rejection differ between individuals with disordered eating and those without?” The means for maternal acceptance-rejection included 88.12 (Z-score=-.4153) for the non-disordered eating group and 96.63 (Z-score=.7780) for the disordered eating group. The two groups were found to be significantly different, with the disordered-eating group showing higher rates of maternal rejection. The means for paternal acceptance-rejection were 94.35 (Z-score=-.4697) for the non-disordered eating group and 103.99 (Z-score=.6207) for the disordered eating group. The two groups were also found to be significantly different with the disordered eating group indicating higher rates of paternal rejection. Therefore, according

to the data in this study, disordered eating individuals show statistically significant higher levels of both maternal and paternal rejection in comparison to their non-disordered eating counterparts. Hypothesis one is thereby supported, with both null hypotheses being rejected with statically significant differences existing between the two groups. However, it is important to note that the data indicated a small effect size for both the maternal and paternal t-tests.

### Research question 2

Research question 2 asks, “Does family functioning differ between individuals with disordered eating and those without?” The means for the general family functioning scale derived from the Family Assessment Device were 1.82 (SD=.56) for the non-disordered eating group and 2.02 (SD=.63) for the disordered eating group. The null hypothesis is rejected at a probability level of .001, indicating these two groups are significantly different. Therefore hypothesis two is supported, which stated that the disordered eating group would show significantly higher levels of unhealthy general family functioning than the non-disordered eating control group. Again, although statistical significance was found using a t-test analysis, the effect size was relatively small at  $d=0.358$ , making the results more tenuous to interpret.

In a study looking at the relationship between Eating Disorder Inventory-2 scores with Family Assessment Device scores, McGrane and Carr (2002) used t-tests to analyze the data as was conducted in the current study. The research team found significant differences on the dimensions of general functioning, problem-solving, roles, and affectiveness responsiveness between women in the eating disorder group versus the normal controls. In contrast, Kent and Clopton (1988) examined a non-clinical college

sample and found no significant differences reported between family relationship patterns of bulimics and normals.

### Research question 3

Research question 3 asks, “Does the presence of parental rejection predict disordered eating symptomatology?” Abbreviated regression models were used to address this research question, including only the three primary variables (maternal acceptance-rejection, paternal acceptance-rejection, and general family functioning). Only the maternal acceptance-rejection composite variable was significant in predicting disordered eating attitudes and behaviors using the first model. However, in step-wise regression analysis, two models were pulled out as most predictive using the three primary variables. The first included only maternal rejection-acceptance, confirming this variable as most influential in the regression model. The second included both maternal and paternal rejection-acceptance variables as significant. A further breakdown of the analysis of maternal and paternal variables is provided in research question five below.

The relative impact of parental rejection (both paternal and maternal) in predicting disordered eating is shown to be significant but small, with an  $r^2$  value of .039 ( $F=16.568^{**}$ ). Overall, the data suggest that maternal acceptance-rejection is the most influential variable in the model when considering the standardized regression coefficient. In comparing the effects of the standardized coefficients in the abbreviated model, maternal rejection has nearly twice the effect of paternal rejection and four times the effect of general family functioning. Therefore, generally speaking, perceptions of parental acceptance-rejection are related to the outcome of disordered eating. This

relationship however is explored further through research question five which specifies the influence of maternal versus paternal variables.

It was hypothesized that parental acceptance-rejection variables would contribute significantly to predicting disordered eating based on a number of studies. This hypothesis was based, in part to a study recently published by Dominy, Johnson, and Koch (2000) which found that women with binge eating disorder reported their father to be more rejecting and less warm in comparison to mothers. Other academic literature supporting this hypothesis included numerous studies using Rohner's rejection construct that found it to be significantly correlated with other psychosocial problems such as drug and alcohol abuse, schizophrenia, depression, conduct disorder, externalizing behaviors, and delinquency (Khaleque & Rohner, 2002; Rohner & Nielsen, 1978). The majority of these studies used t-tests to analyze if differences exist between treatment (unhealthy) and control (healthy) groups, but did not run more complex analyses such as multiple regression analyses or structural equation modeling. As evidenced through research question one above, results of the current study could be interpreted as contributing to the literature supporting the connection between parental rejection and psychosocial problems. However, when looking at this relationship through regression analysis, a correlational statistical test, it becomes more difficult to interpret with confidence. The abbreviated models used in this study show parental acceptance-rejection (particularly maternal acceptance-rejection) to be significant in relationship to disordered eating, however the variance accounted for in the outcome variable is relatively small.

The complexity of the outcome variable is critical to consider when thinking about what sizes of  $r^2$  values would be expected. Disordered eating has been described as

a multi-factorial and multi-dimensional construct. The complexity of this variable is not likely to be explained by any one primary predictor variable such as parental rejection. Through a human ecological framework, Bronfenbrenner (1979) theorizes that individuals live within multiple systems, interacting with millions of people, symbols, and objects throughout their lives. In considering this framework, it is useful to find that nearly 4% of the disordered eating variance is accounted by parental rejection. However, it is just as useful to recognize that many other variables, both within and outside of the family, contribute to the onset and maintenance of the illness as well, such as peers, role of media, genetics, life cycle stage, gender, and incidences of traumatic events to name a handful in the research literature.

#### Research question 4

Research question 4 asks, “Does the perception of unhealthy family functioning predict disordered eating symptomatology?” Of the three primary independent variables, general family functioning showed the least impact relative to the outcome variable and was dropped from the model when using step-wise regression techniques. The general family functioning sub-scale was chosen as one of the primary independent variables for the abbreviated model analysis because it includes various aspects of family functioning. Therefore, during the first stage of analysis, the investigator would have responded to this research question by stating that unhealthy family functioning does not serve as an influential variable in predicting disordered eating. However, in the second round of analysis when an expanded regression model and follow-up model were used, different results emerged when considering the variable of family functioning.



As mentioned earlier, the Family Assessment Device contains seven sub-scales. All of these sub-scales were included in the expanded regression model to find if other sub-scales, beyond general family functioning were useful in predicting disordered eating. Results from the expanded regression model indicated that two sub-scales from the Family Assessment Device were significant in predicting the outcome variable. These included family problem-solving and family behavior control.

Family problem solving evidenced a negative relationship with disordered eating. In other words, as family problem solving decreased, indicating greater ease in developing solutions in the family, the likelihood of disordered eating increased. The problem solving scale refers to the family's abilities to resolve problems within and outside the family at a level which maintains effective family functioning (Miller, Epstein, Bishop, & Keitner, 1985). This finding is inconsistent with existing literature, which has most often tended to highlight a positive relationship between the presence of eating disorders and poor problem-solving, particularly in the cases of bulimia. Waller, Calam, and Slade (1989) found women with bulimia were shown to rate their family as having problem solving difficulties according to the FAD. Additionally, Waller (1994) found the disordered eating symptom of bingeing to be positively associated with perceptions of poor problem-solving. Two differences between these studies and the present study include type of sample (clinical versus non-clinical) and sample sizes. First, both studies cited here that found significant positive relationships between poor problem solving and the presence of eating disorders used clinical samples whereby participants were recruited from eating disorder clinics. In contrast, the sample used in the present study was a non-clinical group of college-aged women with no confirmed eating disorder

diagnoses. Second, the sample size of the current study included more than 800 individuals, whereby the other two studies cited here included an  $n=81$  (Waller, 1994) and  $n=78$  (Waller, Calam, & Slade, 1989).

Another explanation for the interesting negative relationship between the perception of healthy family problem solving and the presence of disordered eating may be the likelihood for respondents with disordered eating to overstate the positive in their family. The academic literature evidences differences between bulimic and anorexic study participants in regards to how they report perceiving family interactions. Specifically, women with bulimic symptoms tend to report less healthy interactions in their families in comparison to women with anorexic (restricting) symptoms who tend to present their family environment as more healthy (Scalf-McIver & Thompson, 1989; Waller, Calam, & Slade, 1989).

Family behavior control was the only significant variable to emerge through the follow-up regression model including the additional variables of problem-solving and maternal warmth-affection. Family behavior control showed a positive relationship with disordered eating. In other words, as family behavior control increased, indicating greater control of family members behaviors, the likelihood of disordered eating also increased. The behavior control scale refers to the ways in which a family expresses and maintains standards of behavior for family members. This dimension of family functioning outlines how a family handles behavior in three areas including physically dangerous situations, situations that involve the meeting and expressing of psychobiological needs and drives, and situations involving socializing behavior both inside and outside of the family boundary (Epstein, Bishop, & Levine, 1978; Epstein, Bishop, Ryan, Miller, & Keitner,

1993). This finding is consistent with the literature as Hodges, Cochran, and Brewerton (1998) found individuals exhibiting binge-eating behaviors tended to rate their families as having increased control than a group of controls. Waller, Calam, and Slade (1989) used the Family Assessment Device to assess if women having both anorexia and bulimia rated their families as more unhealthy. The research team found that women with anorexia and bulimia rated their families as having more difficulty on the affective involvement and behavior control scales of the Family Assessment Device (Waller, Calam, & Slade, 1989). Also, a significant positive relationship was found between the variable of parental control and the presence of anorexia and bulimia in an adolescent population according to Felker and Stivers (1994). In this study it was discovered that as parental control increased, so too did eating disorder symptoms, mirroring the findings of the current study.

#### Research question 5

Research question 5 asks, “Does maternal or paternal rejection serve as a better predictor of disordered eating symptomatology?” The response to this research question is partially embedded in question three above, where it was eluded that maternal acceptance-rejection served as a more influential predictor in the regression model when compared to paternal rejection. Maternal acceptance-rejection was twice as effective at predicting the outcome variable as paternal acceptance-rejection according to the regression coefficients reported in the abbreviated regression model.

As was conducted with the family functioning variable in the analysis, the parental acceptance-rejection composites were broken down into four sub-scale variables (warmth-affection, aggression-hostility, neglect-indifference, and undifferentiated

rejection) for further exploration. These eight additional variables (four for maternal and four for paternal) were included in the expanded regression model for the purpose of deriving clarification on what sub-scales from the maternal variable were most influential. The largest maternal regression coefficient in the model was warmth/affection. The finding of maternal warmth/affection being the most influential variable is interesting primarily because of the presence of a negative correlation with the outcome variable. According to the data, as maternal warmth/affection decreases, indicating more overall warmth/affection because the scale is reverse coded for consistency with the other PARQ sub-scales, disordered eating actually *increases*. Therefore, the more warmth an individual perceives from her mother, the more likely she is to exhibit disordered eating symptomatology. The relationship seems counterintuitive and is perhaps the most surprising result from the study.

Maternal warmth/affection, as defined by Rohner (1991), refers to mother-child relationships where mothers are perceived to give love or affection, exhibit an interest in her daughter's activities and well-being, and show approval of the child. One possible way of explaining the relationship between high maternal warmth and increased disordered eating is to think about the functionality of the symptoms. Numerous clinicians, theorists, and researchers have postulated rationales for the presence of eating disordered symptoms over the years. For instance, Walther (1994) states that eating disorder symptoms might represent expressions of anger, ways of retaliating, or strategies for competing in families with an overemphasis on achievement and thinness. Williamson (1990) interpreted these symptoms as indirect forms of rebellion or "passive-aggressive" behaviors. Still others postulate symptoms may serve the function of coping

with depression or anxiety, elicit attention and nurturance, or work to keep the family (particularly the parents) together (Minuchin, Rosman, & Baker, 1978). One hypothesis generated for this study is that eating disorder symptoms may be a way of seeking acceptance and approval from parents, particularly in those families that value thinness, appearance, and achievement. The results achieved may indicate that individuals perceive greater maternal acceptance with the presence of disordered eating symptoms. In other words, if a daughter believes that she would gain more acceptance from her mother if she emulated more of what Western society deems beautiful for a female, achieving thinness as one of these standards of beauty may act as a vehicle to soliciting increased maternal warmth and affection. Although an interesting idea, much more research must be conducted before this idea can be stated with any degree of certainty. Qualitative interviews may be an ideal way to gather data from participants to either support or refute this contention.

In further exploration of the relationship between maternal warmth and disordered eating, a follow-up regression model was run with the three variables that emerged as statistically significant in the expanded model, maternal warmth-affection, family problem-solving, and family behavior control. The follow-up regression model provided insight into the unexpected relationship between maternal warmth and disordered eating as the negative sign changed to a positive sign for the maternal warmth variable. This sign change indicated that a different relationship was evidenced by the model, whereby as maternal warmth *decreased*, disordered eating *increased*. This new relationship is likely more accurate as the follow-up model incorporated less variables and factored out some of the collinearity problem amongst the independent variables. However, although

the sign changed, making the relationship between maternal warmth and disordered eating consistent with existing literature, the relationship was non-significant.

Due to the inconsistency in results between the various regression models run within the current study, particularly with regards to the maternal acceptance-rejection variable of maternal warmth-affection, caution is taken in interpreting, with any degree of confidence, what the data indicates. More research is needed to clarify the nature of the relationship between maternal acceptance-rejection and disordered eating as inconsistency was found in the results of this study's analysis.

### *Limitations*

As with any research study, limitations exist, and should ideally be identified from the conception of a project as to make decisions about their impact on affecting the results. A number of limitations within the current study's design will be discussed below. These limitations include sample, generalizability, use of self-report measures, and undifferentiated eating disorder symptomatology.

### Sample

In an effort to target a non-clinical sample fertile with disordered eating symptomatology, a university setting was chosen. The inclusion of this specific female population, as well as the utilization of a range of disordered eating symptoms versus specific clinical diagnoses provides a wealth of data, but limits generalizability. The findings in the study must be interpreted with caution as it is unsure if they are indicative of sub-clinical levels of disordered eating, more common to extreme dieters rather than speaking to the experiences and perspectives of a clinical sample with confirmed eating disorder diagnoses. Follow-up interviews to verify whether the high-scoring college

students had a clinical eating disorder were not conducted. Further, because the high-scoring groups contained some individuals who had relatively minor degrees of eating disturbance, reported differences between groups may be conservative.

Beyond allowing for a range of eating disordered symptomatology and utilizing a college sample, the sampling procedure utilized threatens generalizability. All of the participants involved in the project were self-selected rather than randomly drawn from the population. This may limit the results' generalizability due to characteristics potentially unique to individuals who self-select versus those who do not.

#### Self-report measures

Utilization of self-report measures involving recall responses is a limitation to this study as the Parental Acceptance-Rejection Questionnaire asked participants to think back to when they were in late childhood to rate their responses. To off-set the limitation inherent in using self-report measures, the investigator strived to incorporate measures with particularly high validity and reliability as evidenced through standardization studies of the instruments and other researchers using the measures over the past decade (Garner, Olmsted, Bohr, & Garfinkel, 1982; Netemeyer & Williamson, 2001; Rohner, 1986, 1991; Khaleque & Rohner, 2002; Epstein, Bishop, Ryan, Miller, and Keitner, 1993). Epstein, Bishop, & Levin, 1978; Epstein, Baldwin, & Bishop, 1983; Kabacoff, Miller, Bishop, Epstein & Keitner, 1990; Waller, 1994). However, it is possible that weaknesses in the self-report instruments accounted for the small amount of variance explained in the outcome in both the abbreviated and expanded regression models.

Useful information was solicited by examining participants' perceptions of their relationships with their parents and families. However, conclusions are limited to

participants' subjective views, which may deviate in certain aspects from more objective family interactional patterns obtained through observation methods. One specific potential problem with the use of self-report eating attitudes and behaviors rather than conducting intensive clinical interviews to achieve the presence of eating disorders is the possibility of denial preventing accurate recognition or reporting of disordered eating symptoms. Due to the denial often characteristic of eating disorders, particularly anorexia nervosa, participants may have been less aware of, or less willing to report unhealthy aspects of family functioning or negative relationships with their parents. Vandereycken and Vanderlinden (1983) state that the tendency to deny problems is not uncommon among individuals with anorexia nervosa, and with increasing severity of the disorder, so may the distortion of response pattern. This may have contributed to the small amount of variance accounted for in the regression models presented.

Embedded within self-report measures is the aspect of social desirability. The instruments used within this study target personal aspects of an individuals' life including their eating behaviors and attitudes, their perspective on their mother's and father's liking of them, as well as their viewpoint of how their family functions. Even with assurance of anonymity, participants may have answered the questionnaires more based on appearing "healthy" than on providing true and accurate information.

#### Sequencing of the questionnaires

The data collection technique of having participants complete both mother and father questionnaires within the same time period and sequentially may raise a question of validity. Might the scale scores have changed if completed on separate occasions without the tendency to compare immediately the perception of mother and father? It



may have been likely that more perceived maternal warmth magnified the perception of paternal neglect for participants. For instance, if an individual completed the maternal warmth scale in a positive direction (as evidenced by the results), this comparison could be made when completing the questionnaire regarding her relationship with her father. In essence, the perception of these relationships is in fact, relative. Perhaps the more warmth perceived from mother, the more it highlighted the neglect felt from the relationship with father. Rather than seeing parents as a unit and responding with similar scores for each, the respondents seemed to very much view their parents as independent entities in their lives. The maternal warmth scores may have been inflated to account for the child coping with rejection or neglect from her father. Or the paternal neglect scores may have been inflated as the respondent compared her father's engagement in her life with her mother's, which was already scored as high. In this case, there is no evidence of regressing toward the mean for these two variables, but rather they seem to increase in opposite directions as the level of disordered eating increases.

#### Undifferentiated eating disorder symptomatology

Interpretation of results and comparisons to previous research are also limited by the inability to distinguish between subjects with specific eating disorder symptoms and diagnoses, particularly anorexia nervosa, bulimia nervosa, and binge-eating disorder. Certain expected relationships between disordered eating symptomatology and family variables might have been insignificant or inconsistent due to the mixture of indistinguishable symptoms with the EAT-26. The Eating Attitudes Test specifies its measure of anorexia nervosa symptomatology, however there are a number of questions that seem to assess for bingeing and purging behaviors prevalent in bulimia nervosa.

Therefore, results from the present study may be limited in comparing its findings to research whereby participants were separated based on symptoms, such as bingeing and purging versus restricting.

### *Clinical implications*

The sample utilized in the current study as well as the research aims call for two different treatment modalities to be discussed here. First, because of the college-aged sample, it is critical to consider their current environment, the university setting, when incorporating clinical implications. Additionally however it is necessary to discuss clinical implications regarding the content of the study which included perceptions of family. Therefore, family therapy implications will be discussed in the context of this section as well.

### Treatment on the college campus

As many as 61% of college students have been found to display eating disordered behaviors while not meeting the criteria for an eating disorder (Mintz & Betz, 1988). Koszewski, Newell, and Higgins (1990) found that approximately one-quarter of the female undergraduates they surveyed felt that their eating was out of control. In the current study, 21% of college females taking the EAT-26 scored above the clinical cut-off, signifying problematic symptoms. As was found in a study conducted by Schwitzer, Bergholz, Dore, and Salimi (1998), the items most highly endorsed on the Eating Attitudes Test in the current study involved obsessive thoughts about food, fat on the body, caloric intent, and exercise. The research team headed by Schwitzer noted that many of the females surveyed did not meet full diagnostic criteria for an eating disorder, but did however display serious symptoms highly correlated with the disorders.

Specific questions within the EAT-26 were analyzed to get a better sense of the eating attitudes and behaviors of the target sample, which includes undergraduate female college students. The most highly endorsed items focus on obsessions and include preoccupation with food (30.9%), the calorie content in food (37.2%), the desire to be thinner (43.3%), the thought of having fat on her body (36.2%), and burning up calories during exercise (59.0%). Over half of the sample (53.7%), identify themselves as being terrified about being overweight. One hundred and six females (12.7%) reported experiencing uncontrollable bingeing often, usually, or always. In contrast, Hesse-Biber, Marino, and Watts-Roy (1999) report that between 60 and 80 percent of college women engage in regular binge eating and other abnormal behaviors that fall short of diagnostic criteria.

The EAT-26 assesses for vomiting in two questions, with the first asking if the behavior actually occurs and the other assessing the impulse, not necessarily the behavior. Twenty-eight females (3.4%) reported vomiting after eating, whereas sixty-nine (8.3%) reported having the impulse to vomit after eating. Koszewski, Newell, and Higgins (1990) found 6% of a female undergraduate population surveyed reported forcing themselves to vomit after meals or using laxatives as weight control measures.

Table 22: Frequencies for Specific EAT-26 Questions

<b>EAT-26 Question</b>	<b>Code*</b>	<b>Frequency</b>	<b>Percent</b>
Am terrified about being overweight	1.00	386	46.3
	2.00	448	53.7
Find myself preoccupied with food	1.00	576	69.1
	2.00	258	30.9
Have gone on eating binges where I feel that I may not be able to stop	1.00	728	87.3
	2.00	106	12.7
Aware of the calorie content of foods that I eat	1.00	524	62.8
	2.00	310	37.2
Vomit after I have eaten	1.00	806	96.6
	2.00	28	3.4
Am preoccupied with a desire to be thinner	1.00	473	56.7
	2.00	361	43.3
Think about burning up calories when I exercise	1.00	342	41.0
	2.00	492	59.0
Am preoccupied with the thought of having fat on my body	1.00	532	63.8
	2.00	302	36.2
Feel that food controls my life	1.00	694	83.2
	2.00	140	16.8
Have the impulse to vomit after meals	1.00	765	91.7
	2.00	69	8.3

\*Code: 1.00 = sometimes, rarely, or never ( non-disordered); 2.00 = often, usually, or always (high risk for disordered eating)

It is recommended that treatment on a college campus consist of three components as originally suggested by Schwitzer and colleagues (1998). The evidence within the current study indicate that a significant portion of young females are struggling with disordered eating to a degree that likely interferes with interpersonal relationships, physical, nutritional, and developmental growth, and cognitive abilities. The first tier of treatment includes prevention, followed by intermediate services and remedial treatment (Schwitzer et al., 1998). The prevalence and range of symptoms found in the current study suggest a thorough intervention framework is needed on college campuses today. Prevention can be incorporated into introductory courses as well as both the dormitory and cafeteria environments through nutritional and psychoeducation regarding the

benefits of healthy eating and body image. Intermediate services, the second tier of the intervention framework, targets sub-clinical disorders. These services might likely be delivered through the campus health center, the athletic department, the Greek system, and any campus mental health clinic through conducting psychoeducation groups aimed at developing skills, shifting faulty cognitions, and incorporating new behaviors. The third and final tier of the framework involves more intensive individual, group, and family therapeutic efforts. The campus mental health clinic may be an efficient avenue for the execution of such efforts. However, it should be noted that the inclusion of multi-disciplined professionals at this level is ideal for comprehensive treatment. A common multi-disciplinary team includes a therapist, nutritionist, physician, and at times a psychiatrist.

#### Treatment within the family

The following section focuses on the current study's finding that family behavioral control was the most influential predictor of disordered eating. The variables including age of the symptomatic individual, format of treatment, and goals of treatment will be discussed as pertinent to the facilitation of family therapy. Each of these factors will be explored through this lens of behavioral control and recommendations will be made based on existing academic and clinical literature.

The first therapeutic factor needing to be addressed by the family therapist is in regards to the symptomatic individual's age, which will help determine the appropriate format of treatment. Recent research suggests that younger, adolescent individuals displaying eating disorders benefit greatly from conjoint family therapy (Minuchin, Rosman, & Baker, 1978; Russell, Szumukler, Dare, & Eisler, 1987; Dare, Eisler, Russell,

& Szmukler, 1990; Eisler, Dare, Russell, Szmukler, Le Grange, & Dodge, 1997). Russell, Szmukler, Dare, and Eisler (1987) conducted one of the few controlled trials comparing family therapy with individual therapy. Their findings support that family therapy is more effective than individual therapy in patients whose illness was not chronic and had begun before the age of 19 years old. Young adults, such as those included in the current study's sample (ages 18-25), have been shown to benefit from separated family therapy whereby parents and the individual engage in separate counseling simultaneously. Some researchers have provided evidence that a different form of family therapy (separated rather than conjoint) may be better suited to their life cycle stage of launching from the family system (LeGrange, Eisler, Dare, and Russell, 1992).

The eating disordered individual's life cycle stage plays a key role in addressing treatment. Considering the current study's sample, the launching or individuation-separation process is underway for the participants. Vanderlinden and Vandereycken (1991), a team that has spent the vast majority of their research time studying eating disorders in the context of family published a set of guidelines for a family therapeutic approach to treating eating disorders. Within this approach it is recommended that clinicians dedicate time and attention to facilitating the separation-individual process of the symptomatic individual. Vanderlinden and Vandereycken (1991) found that patients who actually leave the family's home and start living independently function better than patients who stay in their parent's home.

Considering the finding that individuals with higher levels of disordered eating perceive greater levels of behavior control, the launching process may be equally exciting and terrifying. It is likely that their parents have managed many aspects of their lives up

through adolescence including finances, social schedules, and many major decisions such as post high-school plans. The launching process necessarily decreases behavioral control, shifting decision-making responsibility from the parents in the system to the individual. In the case of an eating disorder, the individual is first placed in charge of her symptoms and then is encouraged to manage other areas of her life. Not only is this a great shift for the young adult, but equally for the parents who may become extremely anxious with their new experience of feeling out of control. At this stage in treatment, Vanderlinden and Vandereycken (1991) advise the therapist to predict relapse, as the family may take the cue of returning symptoms to mean they are once again needed to control various aspects of their daughter's life.

In combining the significant predictors found in the current study to contribute to disordered eating (family behavior control and maternal acceptance-rejection), Bruch (1973) argued that anorexia may be interpreted as a result of a child's struggle to develop her own self-identity within a mother-daughter relationship that limits the daughter's autonomy. This limited autonomy may be related to the perception of high behavior control within the family as well as increased maternal rejection. Therapeutically it is often desired to determine the functionality of the primary symptom. According to Bruch's (1973) contention, combined with the findings of this study, the purpose of an eating disorder may be to break free from her mother's prescribed identity and develop her own while gaining control in some area of her life. If this hypothesis were captured by the family therapist, he or she would work to change the family system so that the young woman would have the freedom to develop her own identity without the need for an eating disorder to facilitate this yearning. Simultaneously, the family therapist would

need to balance the system by concentrating on what function it served for mother to be critical, rejecting, or enmeshed with her daughter, likely examining her current spousal relationship or family of origin legacies. A number of writers have talked about the difficulty parents may have letting go of their child during the separation-individual phase of the life cycle, proposing that this struggle may inhibit the growth of the developing adult.

Beyond considering the most appropriate treatment format for the individual, conjoint versus separated, it is prudent to acknowledge the experience of the parents in the family system as being impacted by the presence of an eating disorder. A great majority of studies, including the current one, consider parents and families as potential contributors to the etiology of an eating disorder. However, it is important to note that any time a child is diagnosed with an illness, parents are put at psychological risk as they are faced with the stress of adapting to the illness (Gilbert, Shaw, & Notar, 2000). LeGrange, Eisler, Dare, and Russell (p. 348, 1992) state, “we do not know what roles family changes might play in preventing future relapse of the illness”. In essence, acknowledging that parents can serve as an asset to treatment rather than viewing them as a necessary liability is likely beneficial to the treatment process and recovery.

#### *Future directions*

A logical next step to the current research would include an investigation looking at the children’s role as provokers of their own rejection (Rohner, 1991) or the presence of behavior control, problem-solving, or maternal acceptance-rejection as a response to disordered eating symptomatology rather than as precursors. Any linear relationship gathering information from one individual in a system is inherently limited. Therefore



future research could strive to include parents and siblings in data reporting to gain a more holistic picture of the system. As Bruch contended, there is likely a mutual reciprocation of rejection, parents to child and child to parents. Gaining the parents' perspectives would add richness and depth to an analysis such as this.

It is important to note the presence of inconsistent conceptualizations of such constructs as "rejection" and "acceptance" in the literature. Due to the limited research conducted with disordered eating with the incorporation of "rejection" as a construct, it is difficult to discuss the similarities and differences in the numerous factors that have been found in families relating to disordered eating. The Parental Bonding Instrument (PBI) is a good example of an instrument that may be measuring much the same construct as parental acceptance and rejection, but has used language mirroring attachment theory. Because of the differing measuring techniques, great variability exists across studies so that it becomes difficult to equate what is being measured with certainty or validity.

Greater effort needs to be taken to use language that can be transferable between studies. Perhaps the next logical step is to create a construct of rejection more broad-based that includes many of the factors discussed by many of the researchers conducting studies in the area of disordered eating. This multifactorial construct will likely consist of a number of variables that have been shown to foster the presence of disordered eating in individuals such as family teasing, controlling and critical parenting, a main discourse on appearance and weight (Haworth-Hoepfner, 2000).

The creation of a rejection construct equipped with both what fosters it and what results from it would provide clinicians working with eating disordered populations a variety of entrances into the treatment system. For instance, one option may be to work

with the parental unit in the case where perceived rejection is present in order to shift the discourse in the family from appearance and weight based. Another option may be to work with the individual who feels rejected on ways to alter this

Further, the academic body of literature would benefit from the inclusion of a clinical sample to test the hypotheses proposed in the current study. Confirmatory clinical diagnoses and specified symptoms (restricting, purging, binge-eating) would certainly enhance the ability to conclude, with more accuracy, the relative impact of parental rejection and perception of unhealthy family functioning on the presence of the disorder.

## **APPENDICES**

## APPENDIX A: Informed Consent

### Consent Form for Participation in a Research Study

#### Explanation of Research

The research study you are being asked to participate in is looking at the relationship between individual's perception of their family environment and their relationship with food, eating, and their body. The goal is to solicit information that can be used to better understand the experiences and needs of young adults. All of the information you provide to the investigators will be used for research purposes only.

#### Expectations for Participation

If you agree to participate in this research study you will be asked to complete five questionnaires. The five questionnaires will take approximately 1 hour to 1 ½ hours to complete. The completion of the study's questionnaires is the only expectation for participation in the study.

#### Voluntary Nature

Participation in this research study is purely voluntary. If you decide to participate, you are free to withdraw at any time without affecting any relationships with Michigan State University. You may otherwise refuse to answer any questions if you decide to consent to participate in the study. You may discontinue your participation at any time without penalty, meaning that withdrawal from the research study will not affect your course grade. Again, your participation is voluntary and it is within your full discretion to continue or withdraw from the study at any point in time.

#### Risks and Benefits

There are not expected to be any risks or benefits as a result of your participation in this study.

#### Confidentiality

All information provided will be kept confidential. No identifying information, such as name or address, will be requested on the questionnaires. All questionnaires will be protected through storage in a locked file cabinet to which only the investigators have access. The only people who will have access to questionnaire responses and other evidence of participation will be the projects investigators, Dr. Marsha Carolan and Tianna Hoppe-Rooney. Your privacy will be protected to the maximum extent allowable by law.

#### Contacts and Questions

If you have any questions about this study, please contact the primary investigator Tianna Hoppe-Rooney at (517) 367-5749 or Dr. Marsha Carolan at (517) 432-3327, Department of Family and Child Ecology, 13B Human Ecology Building, Michigan State University, East Lansing, MI 48824. Tianna Hoppe-Rooney can be reached by e-mail at [hopperoo@msu.edu](mailto:hopperoo@msu.edu) or Dr. Carolan can also be reached by e-mail at [carolan@msu.edu](mailto:carolan@msu.edu).

If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish, Ashir Kumar, M.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: [ucrihs@msu.edu](mailto:ucrihs@msu.edu), or regular mail: 202 Olds Hall, East Lansing, MI 48824.

*A copy of this form will be provided for your records.*

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#### **Statement of Consent**

By signing below I agree to participate in the research study being conducted through the Department of Family and Child Ecology at Michigan State University. Your signature below indicates your voluntary agreement to participate in this study.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX B: Demographic Questionnaire

### Individual Information

1. Sex.

- ☐ 1. Female  
☐ 2. Male

2. Age.

- ☐ 1. 18-19  
☐ 2. 20-21  
☐ 3. 22-23  
☐ 4. 24-25  
☐ 5. 25+

3. Education Level. What is the highest grade you completed in school?

- ☐ 1. Freshman  
☐ 2. Sophomore  
☐ 3. Junior  
☐ 4. Senior  
☐ 5. Graduate

4. Major. What is your major? (i.e. child development, psychology, business)

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5. Athletics. Are you part of a collegiate-level sports team?

- ☐ 1. Yes  
☐ 2. No

6. Greek Affiliation. Are you part of the Greek system within MSU (sorority or fraternity)

- ☐ 1. Yes  
☐ 2. No

7. Employment. Are you currently employed?

- ☐ 1. Unemployed; not looking for work  
☐ 2. Unemployed; looking for work  
☐ 3. Employed part-time (includes summer employment)  
☐ 4. Employed full-time  
☐ 5. Other (please specify)

---

Demographic Questionnaire continued

**Family Information**

8. Relationship of parents. Check all the following that are true.

- ☐ 1. Married and living together
- ☐ 2. Not married but living together (consensual union)
- ☐ 3. Separated (married, but not living together)
- ☐ 4. Divorced
- ☐ 5. Widowed
- ☐ 6. Never married

9. Household income. What is your household's income level per year?

- ☐ 1. \$15,000 or less
- ☐ 2. \$15,000 - \$35,000
- ☐ 3. \$35,000 - \$50,000
- ☐ 4. \$50,000 - \$75,000
- ☐ 5. \$75,000 or above

10. Ethnicity. What is your family's ethnic background? (check all that apply)

- ☐ 1. Caucasian
- ☐ 2. African American
- ☐ 3. Asian American / Pacific Islander
- ☐ 4. Hispanic American
- ☐ 5. Native American
- ☐ 6. Other: \_\_\_\_\_

11. Children. How many siblings do you have? \_\_\_\_\_

12. Birth order. Putting all your siblings in order from oldest (first born) to youngest (last born), where do you fall (e.g., only child, first born, second born, etc.)?

\_\_\_\_\_

## APPENDIX C: Eating Attitudes Test (EAT-26)

Please check a response for each of the following questions.

	Always	Usually	Often	Sometimes	Rarely	Never
1. Am terrified about being overweight.						
2. Avoid eating when I am hungry.						
3. Find myself preoccupied with food.						
4. Have gone on eating binges where I feel that I may not be able to stop.						
5. Cut my food into small pieces.						
6. Aware of the calorie content of foods that I eat.						
7. Particularly avoid food with a high carbohydrate content (i.e., bread, rice, potatoes, etc.).						
8. Feel that others would prefer if I ate more.						
9. Vomit after I have eaten.						
10. Feel extremely guilty after eating.						
11. Am preoccupied with a desire to be thinner.						
12. Think about burning up calories when I exercise.						
13. Other people think that I am too thin.						
14. Am preoccupied with the thought of having fat on my body.						
15. Take longer than others to eat my meals.						
16. Avoid foods with sugar in them.						
17. Eat diet foods.						
18. Feel that food controls my life.						
19. Display self-control around food.						
20. Feel that others pressure me to eat.						
21. Give too much time and thought to food.						
22. Feel uncomfortable after eating sweets.						
23. Engage in dieting behavior.						
24. Like my stomach to be empty.						
25. Enjoy trying new rich foods.						
26. Have the impulse to vomit after meals.						

Copyright: Garner, Olmsted, Bohr, and Garfinkel, 1982

## APPENDIX D: Parental Acceptance Rejection Questionnaire (Mother)

\_\_\_\_\_  
*Name*

\_\_\_\_\_  
*Date*

The following pages contain a number of statements describing the way different mothers act toward their children. Read each statement carefully and think how well it describes the way your **biological** mother treated you while you were growing up. Especially think about the time when you were about 7-12 years old. Work quickly; give your first impression and move on to the next item. Do not dwell on any item.

Four lines are drawn after each sentence. If the statement is basically true about the way your mother treated you then ask yourself, "Was it almost *always* true?" or "Was it only *sometimes* true?" If you think your mother almost always treated you that way, put an X on the line ALMOST ALWAYS TRUE; if the statement was sometimes true about the way your mother treated you then mark SOMETIMES TRUE. If you feel the statement is basically untrue about the way your mother treated you then ask yourself, "Was it *rarely* true?" or "Was it almost *never* true?" If it is rarely true about the way your mother treated you put an X on the line RARELY TRUE; if you feel the statement is almost never true then mark ALMOST NEVER TRUE.

Remember, there is no right or wrong answer to any statement, so be as honest as you can. Answer each statement the way you feel your mother really is rather than the way you might like her to be. For example, if in your memory your mother almost always hugged and kissed you when you were good you should mark the item as follows:

### EXAMPLE

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
1. My mother hugged and kissed me when I was good...	__X__	_____	_____	_____

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	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY MOTHER</u></b>				
1. Said nice things about me...	_____	_____	_____	_____
2. Nagged or scolded me when I am bad...	_____	_____	_____	_____
3. Totally ignored me...	_____	_____	_____	_____
4. Did not really love me...	_____	_____	_____	_____
5. Talked to me about our plans and listened to what I had to say...	_____	_____	_____	_____
6. Complained about me to others when I did not listen to her...	_____	_____	_____	_____
7. Took an active interest in me...	_____	_____	_____	_____
8. Encouraged me to bring my friends home, and tried to make things pleasant for them...	_____	_____	_____	_____
9. Ridiculed and made fun of me...	_____	_____	_____	_____
10. Ignored me as long as I did not do anything to bother her...	_____	_____	_____	_____
11. Yelled at me when she was angry...	_____	_____	_____	_____
12. Made it easy for me to tell her things that were important...	_____	_____	_____	_____
13. Treated me harshly...	_____	_____	_____	_____
14. Enjoyed having me around her...	_____	_____	_____	_____
15. Made me feel proud when I did well...	_____	_____	_____	_____
16. Hit me, even when I did not deserve it...	_____	_____	_____	_____

	TRUE OF MY MOTHE		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY MOTHER</u></b>				
17. Forgot things she was supposed to do for me...	_____	_____	_____	_____
18. Saw me as a big bother/sister...	_____	_____	_____	_____
19. Praised me to others...	_____	_____	_____	_____
20. Punished me severely when she was angry.	_____	_____	_____	_____
21. Made sure I had the right kind of food to eat...	_____	_____	_____	_____
22. Talked to me in a warm and loving way...	_____	_____	_____	_____
23. Got angry at me easily...	_____	_____	_____	_____
24. Was too busy to answer my questions...	_____	_____	_____	_____
25. Seemed to dislike me...	_____	_____	_____	_____
26. Said nice things to me when I deserved them...	_____	_____	_____	_____
27. Got mad quickly and picked on me...	_____	_____	_____	_____
28. Was concerned who my friends were...	_____	_____	_____	_____
29. Was really interested in what I did...	_____	_____	_____	_____
30. Said many unkind things to me...	_____	_____	_____	_____
31. Ignored me when I asked for help...	_____	_____	_____	_____
32. Thought it is my own fault when I was having trouble...	_____	_____	_____	_____
33. Made me feel wanted and needed...	_____	_____	_____	_____
34. Told me that I got on her nerves...	_____	_____	_____	_____

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY MOTHER</u></b>				
35. Paid a lot of attention to me...	_____	_____	_____	_____
36. Told me how proud she was of me when I was good...	_____	_____	_____	_____
37. Went out of her way to hurt my feelings...	_____	_____	_____	_____
38. Forgot important things I thought she should remember...	_____	_____	_____	_____
39. Made me feel I was not loved any more if I misbehaved...	_____	_____	_____	_____
40. Made me feel what I did was important...	_____	_____	_____	_____
41. Frightened or threatened me when I did something wrong...	_____	_____	_____	_____
42. Liked to spend time with me...	_____	_____	_____	_____
43. Tried to help me when I was scared or upset...	_____	_____	_____	_____
44. Shamed me in front of my friends when I misbehaved...	_____	_____	_____	_____
45. Tried to stay away from me...	_____	_____	_____	_____
46. Complained about me...	_____	_____	_____	_____
47. Cared about what I thought and liked me to talk about it...	_____	_____	_____	_____
48. Felt other children were better than I was no matter what I did...	_____	_____	_____	_____
49. Cared about what I would like when she made plans...	_____	_____	_____	_____

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b>MY MOTHER</b>				
50. Let me do things I thought were important, even if it was inconvenient for her...	_____	_____	_____	_____
51. Thought other children behaved better than I did...	_____	_____	_____	_____
52. Made other people take care of me (for example, a neighbor or relative).	_____	_____	_____	_____
53. Let me know I was not wanted...	_____	_____	_____	_____
54. Was interested in the things I did...	_____	_____	_____	_____
55. Tried to make me feel better when I was hurt or sick...	_____	_____	_____	_____
56. Told me how ashamed she was when I misbehaved...	_____	_____	_____	_____
57. Let me know she loved me.	_____	_____	_____	_____
58. Treated me gently and with kindness...	_____	_____	_____	_____
59. Made me feel ashamed or guilty when I misbehaved...	_____	_____	_____	_____
60. Tried to make me happy...	_____	_____	_____	_____

## APPENDIX E: Parental Acceptance Rejection Questionnaire (Father)

\_\_\_\_\_  
*Name*

\_\_\_\_\_  
*Date*

The following pages contain a number of statements describing the way different fathers act toward their children. Read each statement carefully and think how well it describes the way your **biological** father treated you while you were growing up. Especially think about the time when you were about 7-12 years old. Work quickly; give your first impression and move on to the next item. Do not dwell on any item.

Four lines are drawn after each sentence. If the statement is basically true about the way your father treated you then ask yourself, "Was it almost *always* true?" or "Was it only *sometimes* true?" If you think your father almost always treated you that way, put an X on the line ALMOST ALWAYS TRUE; if the statement was sometimes true about the way your father treated you then mark SOMETIMES TRUE. If you feel the statement was basically untrue about the way your father treated you then ask yourself, "Was it *rarely* true?" or "Was it almost *never* true?" If it was rarely true about the way your father treated you put an X on the line RARELY TRUE; if you feel the statement was almost never true then mark ALMOST NEVER TRUE.

Remember, there is no right or wrong answer to any statement, so be as honest as you can. Answer each statement the way you feel your mother really is rather than the way you might like her to be. For example, if in your memory your father almost always hugged and kissed you when you were good you should mark the item as follows:

### EXAMPLE

	TRUE OF MY FATHER		NOT TRUE OF MY FATHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
1. My father hugged and kissed me when I was good...	<u>  X  </u>	<u>          </u>	<u>          </u>	<u>          </u>

Adapted from : Ronald P. Rohner, 1976

	TRUE OF MY FATHER		NOT TRUE OF MY FATHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY FATHER</u></b>				
1. Said nice things about me...	_____	_____	_____	_____
2. Nagged or scolded me when I am bad...	_____	_____	_____	_____
3. Totally ignored me...	_____	_____	_____	_____
4. Did not really love me...	_____	_____	_____	_____
5. Talked to me about our plans and listened to what I had to say...	_____	_____	_____	_____
6. Complained about me to others when I did not listen to him...	_____	_____	_____	_____
7. Took an active interest in me...	_____	_____	_____	_____
8. Encouraged me to bring my friends home, and tried to make things pleasant for them...	_____	_____	_____	_____
9. Ridiculed and made fun of me...	_____	_____	_____	_____
10. Ignored me as long as I did not do anything to bother him...	_____	_____	_____	_____
11. Yelled at me when he was angry...	_____	_____	_____	_____
12. Made it easy for me to tell him things that were important...	_____	_____	_____	_____
13. Treated me harshly...	_____	_____	_____	_____
14. Enjoyed having me around him...	_____	_____	_____	_____
15. Made me feel proud when I did well...	_____	_____	_____	_____
16. Hit me, even when I did not deserve it...	_____	_____	_____	_____
17. Forgot things he was supposed to do for me...	_____	_____	_____	_____

	TRUE OF MY FATHER		NOT TRUE OF MY FATHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY FATHER</u></b>				
18. Saw me as a big bother/sister...	_____	_____	_____	_____
19. Praised me to others...	_____	_____	_____	_____
20. Punished me severely when he was angry..	_____	_____	_____	_____
21. Made sure I had the right kind of food to eat...	_____	_____	_____	_____
22. Talked to me in a warm and loving way...	_____	_____	_____	_____
23. Got angry at me easily...	_____	_____	_____	_____
24. Was too busy to answer my questions...	_____	_____	_____	_____
25. Seemed to dislike me...	_____	_____	_____	_____
26. Said nice things to me when I deserved them...	_____	_____	_____	_____
27. Got mad quickly and picked on me...	_____	_____	_____	_____
28. Was concerned who my friends were...	_____	_____	_____	_____
29. Was really interested in what I did...	_____	_____	_____	_____
30. Said many unkind things to me...	_____	_____	_____	_____
31. Ignored me when I asked for help...	_____	_____	_____	_____
32. Thought it is my own fault when I was having trouble...	_____	_____	_____	_____
33. Made me feel wanted and needed...	_____	_____	_____	_____
34. Told me that I got on his nerves...	_____	_____	_____	_____
35. Paid a lot of attention to me...	_____	_____	_____	_____

	TRUE OF MY FATHER		NOT TRUE OF MY FATHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY FATHER</u></b>				
36. Told me how proud he was of me when I was good...	_____	_____	_____	_____
37. Went out of his way to hurt my feelings...	_____	_____	_____	_____
38. Forgot important things I thought he should remember...	_____	_____	_____	_____
39. Made me feel I was not loved any more if I misbehaved...	_____	_____	_____	_____
40. Made me feel what I did was important...	_____	_____	_____	_____
41. Frightened or threatened me when I did something wrong...	_____	_____	_____	_____
42. Liked to spend time with me...	_____	_____	_____	_____
43. Tried to help me when I was scared or upset...	_____	_____	_____	_____
44. Shamed me in front of my friends when I misbehaved...	_____	_____	_____	_____
45. Tried to stay away from me...	_____	_____	_____	_____
46. Complained about me...	_____	_____	_____	_____
47. Cared about what I thought and liked me to talk about it...	_____	_____	_____	_____
48. Felt other children were better than I was no matter what I did...	_____	_____	_____	_____
49. Cared about what I would like when he made plans...	_____	_____	_____	_____
50. Let me do things I thought were important, even if it was inconvenient for him...	_____	_____	_____	_____



	TRUE OF MY FATHER		NOT TRUE OF MY FATHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<b><u>MY FATHER</u></b>				
51. Thought other children behaved better than I did...	_____	_____	_____	_____
52. Made other people take care of me (for example, a neighbor or relative).	_____	_____	_____	_____
53. Let me know I was not wanted...	_____	_____	_____	_____
54. Was interested in the things I did...	_____	_____	_____	_____
55. Tried to make me feel better when I was hurt or sick...	_____	_____	_____	_____
56. Told me how ashamed he was when I misbehaved...	_____	_____	_____	_____
57. Let me know he loved me...	_____	_____	_____	_____
58. Treated me gently and with kindness...	_____	_____	_____	_____
59. Made me feel ashamed or guilty when I misbehaved...	_____	_____	_____	_____
60. Tried to make me happy...	_____	_____	_____	_____

## APPENDIX F: Family Assessment Device (FAD)

### *Instructions:*

This booklet contains a number of statements about families. Please read each statement carefully, and decide how well it describes your own family. You should answer according to how you see your family.

For each statement there are four (4) possible responses:

Strongly Agree (SA)	Check SA if you feel that the statement describes your family very accurately
Agree (A)	Check A if you feel that the statement describes your family for the most part.
Disagree (D)	Check D if you feel that the statement does not describe your family for the most part.
Strongly Disagree (SD)	Check SD if you feel that the statement does not describe your family at all.

These four responses will appear below each statement like this:

41. We are not satisfied with anything short of perfection

\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_

The answer spaces for statement 41 would look like this. For each statement in the booklet, there is an answer space below. Do not pay attention to the blanks at the far right-hand side of each space. They are for office use only.

Try not to spend too much time thinking about each statement, but respond as quickly and as honestly as you can. If you have trouble with one, answer with your first reaction. Please be sure to answer every statement and mark all your answers in the space provided below each statement.

### Family Assessment Device

1. Planning family activities is difficult because we misunderstand each other.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
2. We resolve most everyday problems around the house.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
3. When someone is upset the others know why.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
4. When you ask someone to do something, you have to check that they did it.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
5. If someone is in trouble, the others become too involved.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
6. In times of crisis we can turn to each other for support.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
7. We don't know what to do when an emergency comes up.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
8. We sometimes run out of things we need.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
9. We are reluctant to show our affection for each other.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
10. We make sure members meet their family responsibilities.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
11. We cannot talk to each other about the sadness we feel.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
12. We usually act on our own decisions regarding problems.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
13. You only get the interest of others when something is important to them.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
14. You can't tell how a person is feeling from what they are saying.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
15. Family tasks don't get spread around enough.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_

**Family Assessment Device**

16. Individuals are accepted for what they are.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
17. You can easily get away with breaking the rules.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
18. People come right out and say things instead of hinting at them.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
19. Some of us just don't respond motionally.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
20. We know what to do in an emergency.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
21. We avoid discussing our fears and concerns.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
22. It is difficult to talk to each other about tender feelings.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
23. We are having trouble meeting our bills.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
24. After our family tries to solve a problem, we usually discuss whether it worked or not.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
25. We are too self-centered.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
26. We can express feelings to each other.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
27. We have no clear expectations about toilet habits.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
28. We do not show our love for each other.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
29. We talk to people directly rather than through go-betweens.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
30. Each of us has particular duties and responsibilities.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_

### Family Assessment Device

31. There are lots of bad feelings in the family.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
32. We have rules about hitting people.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
33. We get involved with each other only when something interests us.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
34. There's little time to explore personal interests.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
35. We often don't say what we mean.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
36. We feel accepted for what we are.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
37. We show interest in each other when we can get something out of it personally.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
38. We resolve most emotional upsets that come up.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
39. Tenderness takes second place to other things in our family.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
40. We discuss who is to do household jobs.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
41. Making decisions is a problem for our family.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
42. Our family shows interest in each other only when they can get something out of it.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
43. We are frank with each other.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
44. We don't hold to any rules or standards.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
45. If people are asked to do something, they need reminding.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_

Family Assessment Device

46. We are able to make decisions about how to solve problems.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
47. If the rules are broken, we don't know what to expect.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
48. Anything goes in our family.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
49. We express tenderness.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
50. We confront problems involving feelings.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
51. We don't get along well together.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
52. We don't talk to each other when we are angry.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
53. We are generally dissatisfied with the family duties assigned to us.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
54. Even though we mean well, we intrude too much into each others lives.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
55. There are rules about dangerous decisions.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
56. We confide in each other.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
57. We cry openly.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
58. We don't have reasonable transport.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
59. When we don't like what someone has done, we tell them.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_
60. We try to think of different ways to solve problems.  
\_\_\_\_\_SA \_\_\_\_\_A \_\_\_\_\_D \_\_\_\_\_SD \_\_\_\_\_

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