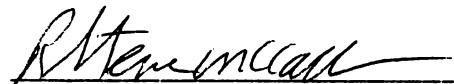


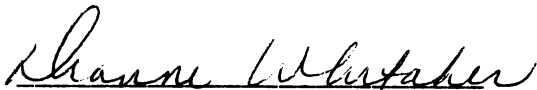
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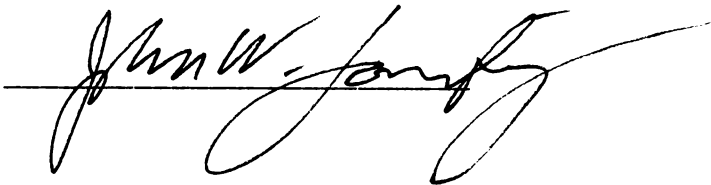
I am submitting herewith a dissertation written by Pamela H. Gross entitled "Development of a Scale Measuring Synchrony Between Mothers and Adolescent Daughters and Synchrony's Relationship to Self-Esteem and Achievement." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

  
R. Steve McCallum, Major Professor

We have read this dissertation  
and recommend its acceptance:







Accepted for the Council:

  
Associate Vice Chancellor and  
Dean of The Graduate School

**Development of a Scale Measuring Synchrony Between Mothers  
and Adolescent Daughters and Synchrony's Relationship to Self-  
Esteem and Achievement**

**A Dissertation  
Presented for the  
Doctor of Philosophy  
Degree  
The University of Tennessee, Knoxville**

**Pamela H. Gross  
May 1997**

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## DEDICATION

This dissertation is dedicated to the precious memory of my mother,

Helen Virginia Arvidson Hilemon

(1919-1988)

whose unconditional love and gentle, graceful guidance live on as a constant source of joy and emotional support. She was known as “Mom” to many and functioned as a confidant and dear listener to countless other young people besides her own fortunate children and grandchildren.

I also dedicate this work to all mothers and daughters in their daily struggle to improve their synchrony, communication and support for each other towards more loving, harmonious relationships.

## ACKNOWLEDGMENTS

This being my third degree from the University of Tennessee there are many people to whom I am grateful. I would like to express my thanks to the faculty and graduate students of the Psychoeducational Studies Unit of the College of Education for their support and friendship. Special thanks to my Dissertation Committee, Dianne Whitaker, John Lounsbury, and Richard Saudargas and especially to my Chairman, Steve McCallum, for his long hours of guidance and reading. I would also like to thank Don Broach for his statistical and programming guidance and Robb Clevenger for his technical support and special care of my "Mac".

I give my love and gratitude to my dear husband, Ernie, whose constant support and encouragement has made this personal achievement possible. I would also like to thank my dear daughters, Naomi and Anna for their patience and support through all the years of my academic struggles. I appreciate all the hours they have contributed to this work as my research assistants and tea makers.

## Abstract

A measure of mother and adolescent daughter synchrony, the Mother Daughter Synchrony Scale (MDSS), was developed for the present study, and the relationship between mother/daughter synchrony and adolescent girl's self-esteem and competence was examined. Synchrony is defined as the quality and quantity of communication, support, and harmony between mother and daughter. MDSS measures both the daughters and the mothers perceptions of the level of synchrony in their relationship. The MDSS was administered to 212 pair of mothers and adolescent daughters. The daughters self-esteem was measured using the Behavior Assessment System for Children Self-Report of Personality. Competance was determined by grade point average (GPA). Good psychometric properties were obtained for the MDSS: Cronbach's alphas ranged from .80 to .91; item-subscale correlation coefficients, ranged from .40 to .79. A strong three-factor structure of the scale (Harmony, Communications and Support) and robust reliabilities provide evidence to support the utility of the MDSS. Synchrony between mother and daughter as perceived by the daughter, was significantly related to daughter's self-esteem and competence. Furthermore a hierarchical regression analysis revealed that synchrony was a good predictor of grade point average after partialing out the variance due to self-esteem. Implications of the utility of the MDSS for clinicians and the need for furture investigations with more diverse populations of mothers and daughters are discussed.

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## **CHAPTER I**

### **INTRODUCTION**

The purpose of this study is to (a) develop a psychometrically sound measure of mother/daughter synchrony and to (b) examine the relationship between mother/daughter synchrony and adolescent girl's self-esteem and competence. Synchrony is defined as the quality and quantity of communication, support, and harmony between mother and daughter.

#### **Adolescent Girls at Risk**

Currently, high numbers of adolescent girls are receiving psychological treatment for eating disorders, drug and alcohol problems, post-traumatic stress reactions to sexual or physical assaults, sexually transmitted diseases, self-inflicted injuries, run-away behavior and attempted suicide (Pipher, 1994; Mann, 1994). In addition, many teenage girls experience depression ranging from mild to severe, caused by biochemical factors, trauma or painful life situations. Too frequently some of these adolescent girls act impulsively in self-destructive ways and may take their own lives in reaction to their confusion and pain. In many cases, young girls lack someone to listen to their problems and help put their life in perspective.

Adolescence is a transitional time in the life-span, a time characterized by a range of difficulties; recent statistics reveal that teenagers in the nineties are under even more pressure than previous generations to deviate from a healthy norm, and girls appear to be more at risk than their male counterparts

for emotional and physical damage during the adolescent years (Mann, 1994). "Recent large-scale studies of adolescent health indicate that adolescent girls suffer more from depression, disturbances about their appearance, eating disorders (from anorexia to obesity), stress, and other manifestations of psychological distress than adolescent boys do" (Debold, Wilson, & Malave, 1993, p. 8). Also there is a difference in the way that boys and girls react to distress. Boys tend to act out aggressively while girls tend to internalize their pain. They are therefore more likely to become depressed or anxious. (Debold et al., 1993). Because withdrawal is less provocative than acting out, it's easy for others to ignore their pain. However, increasingly, health care providers, educators and parents are devoting resources to determine why girls are so vulnerable to depression and anxiety and to plan solutions.

One source of stress for adolescent girls is the pressure to maintain a fashionably thin body (Mann, 1994). In our society young women are taught to value thinness. To achieve the desired body weight many young girls must diet continuously. Rosen and Gross (1987) reported weight reduction efforts by young women to be at epidemic proportions. In a sample of 1,373 high school students they found more than two-thirds of the girls trying to lose weight when the majority of them were already at a normal weight. As a result of this dieting, eating disorders are common. Anorexia, which is an abnormal fear of becoming obese, involving a distorted self-image, a persistent aversion to food and severe weight loss, often begins in early adolescence while bulimia, which

is characterized by uncontrolled binge eating followed by self condemnation and purging, is more common among older teens. Researchers estimate that bulimia affects one-fifth of all college-age women (Pipher, 1994).

The mass media repeatedly promotes other ideas which are damaging to young consumers. For example, women are often portrayed as either victims or sexual objects. In contrast, a disproportionate number of males are portrayed in positions of power. The average American teenager watches 4 1/2 hours of television per day and listens to 10,500 hours of rock music between seventh and twelfth grades (Mann, 1994). Mann (1994) describes rock, heavy metal and rap music as having frequent themes of violence against women. Movies and television productions echo these brutal themes contributing to a desensitized view of violence in the adolescent consumer. Hughes and Hasbrouck (1996) found that viewing television violence contributed to children's aggression and violent behavior and this was especially true for boys. Violent behavior is a learned response and viewing television violence is one of many contributing factors. The leading cause of injuries to women in this country is violence (Hughes and Hasbrouck, 1996). According to one estimate, twenty-five percent of teenage girls have experienced violence from their dates (Levy, 1991). Healthy adolescent development is made more difficult by increased exposure to these mass media messages.

### School Related Stressors

Young girls also receive negative messages at school. Some of these are from their peers and some are from teachers and administrators in the form of gender bias. In 1993 the American Association of University Women Educational Foundation commissioned a study of sexual harassment in public schools; the survey revealed that 85% of girls questioned reported receiving some form of unwanted sexual behavior, and of those, 50% experienced unwanted sexual touching at school (AAUW, 1993). Female students are degraded when sexual or sexist remarks are a common part of the school environment. If this message is internalized, it damages a girl's self-esteem (Sadker & Sadker, 1994).

Girl's academic performance is higher than boys in elementary school, but as soon as they enter adolescence girls start falling behind (Debold et al., 1993). David and Myra Sadker (1994) have been describing gender bias in schools for the past thirty years. They report "female students are more likely to be invisible members of classrooms" because teachers give boys more attention and "more precise and helpful feedback" (p. 1). The Sadker's research concludes girls are trained to be silent, to emphasize appearance and hide intelligence. Although girls score ahead of or equal to boys "on every standardized measure of achievement and psychological well-being" in elementary school, by the time girls are in high school they have fallen behind and score lower on ACT and SAT tests than the male students (Sadker &

Sadker; 1994, p. 13). Judy Mann summarizes gender bias in schools in the following statement "Boys get more time and attention from their teachers; they are rewarded for interrupting and speaking out, for boisterous behavior. Girls are reprimanded, silenced, and put down" (Mann, 1994, p. 13).

The long term goal for our society must be to stop what Mary Pipher calls "girl poisoning messages" and create a safe, healthy atmospheres where all our young people can develop to their utmost potential. However, before society can succeed at meeting such a lofty goal, individual parents and professionals must attend to the immediate crisis every day in homes and schools across the land. Who is there to support and guide these young women?

#### Mothers Provide the Best Support for Adolescent Daughters

Mothers may support daughters by providing an emotional "safe haven", through encouraging healthy mediation during episodes of threat and failure. As stated earlier adolescent girls are at high risk for problems ranging from minor adjustment disorders to serious life-threatening life styles. Without adequate support the defenses of young women may weaken and they may experience serious personal dangers. Even the strongest young women may fail to reach their highest potential without competent support. When mothers reinforce success, encourage effort and provide care for their daughters, these acts are typically viewed as support. Thus, Debold et al. encourage mothers to "join" with their daughters as the preferred way to provide support (1993, p. 177).

In most of the homes where adolescent girls live, it is their mother who is available to listen, advise and provide the basic support. In 1990, 30% of all families were headed by single parents and mothers are the parents in ninety percent of their single-parent homes (Pipher, 1994). Even in two parent homes the mother is typically more involved in the life of the daughter. LeCroy (1988) reported that mothers shared greater degrees of intimacy than fathers for adolescents of either gender. In summarizing results from a number of previous studies, Papini, Farmer, Clark, Micka & Barnett (1990) stated that female adolescents disclose significantly more to mothers than to fathers. Mother's role is typically more than just the authoritarian, they also act as confidants who share experiences (Youniss & Smollar, 1985). Daughters may also have a greater need for emotionally connecting talks with a parent than sons do. If there is a different need between the genders, a mother would be more sensitive to this need for supportive communications. In Papini's study of 174 twelve to fifteen year olds, the results revealed that females exhibited greater emotional self-disclosure to parents and peers than did males. (Papini et al., 1990). Likewise, females encounter more positive and closer interpersonal relations than do males (McCallum & Bracken, 1993). In a study focused on adolescent daughter's development as an end product of the family system, Bell and Bell (1983) concluded the mother's support for the daughter was positively related to the daughter's positive self regard.

Both the mother and the daughter are going through life changes at this time and their self-esteem may be interdependent. Silverberg and Steinberg (1987) reported, adolescence is a time of personal change for both the young person and the middle aged parent. They found mothers' well-being to be negatively related to intense adolescent conflict. For example, mothers who experience the most intense conflict with their daughters are more likely to experience psychological symptoms, report lower self-esteem and are less satisfied with life in general. Mothers of daughters who report greater emotional autonomy report more concerns about their own life situation than mothers whose daughters are less emotionally autonomous (Silverberg & Steinberg, 1987). However, providing adequate support for an adolescent daughter is a very difficult and sometimes unrewarding responsibility for mothers.

#### Mother/Daughter Attachment and Communication

Facilitating and maintaining the mother/daughter attachment is a challenge. Good communication makes the attachment feasible and mutual support possible. Attachment is described in the literature as an affectionate bond between two individuals. Considerable research has focused on mother and infant pairs in an effort to understand the construct of attachment and the beneficial outcomes of attachment for the child (Bowlby, 1969). Attachment between family members can be viewed as an interdependence. Allison and Sabetelli (1988) reported "the basis for positively experienced intimate

relationships outside the family is found in the enduring sense of mature interdependence between young adults and their parents” (p. 14).

Mothers and daughters must make transformations during the adolescent years. Mothers should be attempting to shift their role into a more symmetrical relationship with their maturing, changing daughter. This behavioral shift should be toward more listening and one outcome might be the development of the mother’s empathy for the experience of the adolescent daughter. Meanwhile, the most difficult task of the adolescent is to maintain a balance between the separateness which is required to achieve individuation and the connectedness needed to preserve family interdependence (Allison & Sabatelli, 1988). Apter (1990) describes the adolescent daughter as struggling to negotiate a new relationship and connectedness with her parents and especially with her mother. Research has shown that a stable attachment to parents predicts better adaptive functioning in adolescents (Rice, 1990). Adolescents who have secure attachments have more confidence to begin new relationships and demonstrate more social competence (Chu & Peters, 1995).

Based on her extensive gender-difference research, Gilligan (1982) described the different experiences of male and female adolescents as voices speaking different truths. One of the most important truths for adolescent females is the need for attachments. Gilligan observed that adolescent males frequently spoke of separation as it empowers the self while females spoke of the importance of attachment (1982). This attachment between mothers and

daughters may serve as an emotional lifeline protecting the adolescent daughter from the dangers present in our society. Paradoxically, this overwhelming need for mother protection, which a society perceived as dangerous creates, can have a negative effect on the mother/daughter relationship. Mothers who have few interpersonal skills or inadequate communication skills may react in an authoritarian style. In some cases, when a mother's role must include protecting daughters molestation, rape, incest and physical assault, the mother can be viewed as the "jailer and teacher of servitude". (Debold et al., 1993, p. 145) This protection restricts the daughter's freedom and "accounts for much of the hostility" which can exist in the mother-daughter relationship. (Debold et al., 1993, p. 145).

Piper (1994) stresses listening to adolescent daughters as both a way of providing support and as a way to protect them. Debold and her colleagues agree that mothers must have "good ears" and be willing to listen to learn. Many mothers and daughters engage in conversations which are characterized by reciprocal understanding, mutual disclosures and sharing of experiences (Youniss & Smollar, 1985). This attachment, predominately through communication, bonds the mother in a protective and nurturing manner to the daughter.

Apter (1990) interviewed 65 pairs of mothers and daughters before writing Altered Loves, Mothers and Daughters in Adolescence in which she describes the intense connectedness of these mother daughter dyads and the

importance of the mother's supportive behavior to help validate and strengthen the daughter's ego development. Apter reported that daughters emphatically sought confirmation from the mother. "Daughters worked deliberately upon their mothers to get recognition and acknowledgment of their newly forming adult self....'See me as I am and love me for what I am.'" (Apter, 1990, p. 19). Pipher (1994) also described girls as provoking arguments with their mothers but explained that this was their way of connecting and seeking validation for the changes they are experiencing. Teenage girls trust their mothers to put up with them even when they know they are being unreasonable. These intense interactions and conversations are difficult but necessary to maintain the needed connectedness. Mothers report that the developing independence of their daughters can produce a burdensome experience, which often is difficult to accept (Apter, 1990), but fortunately, most mothers do not give up easily.

Youniss and Smollar's (1985) work, based on eight research studies with over 1,000 adolescents, also concluded that daughters talk to mothers about intimate, personal topics and perceive their mothers as being more sensitive than fathers to their emotional needs. Daughters recognize their mother's personal involvement and emotional support and attempt to keep a smooth relationship with their mothers. In the following quotation, Youniss and Smollars describe the complexity of the mother-daughter relationship:

The data for the mother-daughter relationship presents a more complex picture. This relationship appears to involve a combination of authority

and equality, intimacy and conflict. Mothers, like fathers, are viewed as authority figures but not as distant ones. Daughters feel free to confide in their mothers, as well as to fight with them and to disobey them. Mothers met their daughters' emotional as well as material needs, and daughters often reciprocate in kind. Mothers and daughters also appear to talk about a variety of topics, although the quality of their communication may not always be ideal. In addition, daughters appear to perceive their mothers as persons who need their help as much as they perceive them as persons who can help them. This perception of 'need' with respect to their mothers may explain why the authority aspect of this relationship is tempered by intimacy and moments of equality. (Youniss & Smollar, 1985, p. 51).

When a mother provides emotional support, reciprocal communication and an authoritative parenting style, the daughter will have higher self-esteem and positive competence. There exists extensive research on parenting styles and adolescent outcomes which concur with Youniss and Smollars extensive research on this topic.

Lamborn, Mounts, Steinberg and Dornbusch (1991) conducted a research study of 4,100 adolescents and their families and reported the following: "Parental acceptance and involvement may be the primary contributors to the development of positive self-conceptions and psychological well-being." (p. 1063). These researchers classified the families into four

categories of discipline style: authoritative, authoritarian, indulgent, and neglectful, on the basis of the adolescents' rating of their parents on two dimensions acceptance/involvement and strictness/supervision. The young people were contrasted along four sets of outcomes: psychosocial development, school achievement, internalized distress, and problem behavior. Authoritative parents were defined in this study as being accepting and involved in the lives of their children while maintaining a strictness and a high level of supervision but authoritarian parents were not so much involved in their child's life but were extremely strict (Lamborn et al., 1991). Adolescents who characterized their parents as authoritative evidenced the most positive levels of competence and adjustment across the different outcome variables. Authoritarian families produced young people with the lowest reports of misconduct and the less use of drugs. Although these adolescents also did well in school, they revealed the lowest self confidence of all the groups. Neglectful parents had adolescents who reported the poorest outcomes across all areas. However, neglectful families did not differ significantly from indulgent families in measures of behavior problems, grades, self reliance or somatic symptoms. Students from indulgent families were seen as being more disengaged from school and having more deviant behaviors but also showing the highest levels of self competence.

Research conducted by Bartle, Anderson and Sabatelli (1989) used a model of adolescent personal adjustment which also suggested that family

system-level relationships affect the adolescent. Bartle (1989) and her colleagues found that females who experienced an authoritative style of mothering showed higher levels of individuation when individuation was defined as possessing a “greater degree of psychological autonomy in relationship to one’s parents” (p.284). Authoritative style of parenting was defined by these authors as being “one in which the parents attempt to direct the child’s activities, in a rational, issue-oriented manner, using reason as well as power to achieve these objectives” (Bartle et al., 1989, p. 285). Debold et al. agrees with Bartle et al., “Overwhelmingly, the research on parenting shows that parents who are *authoritative*, rather than either *authoritarian* or *permissive*, raise children who can take care of themselves and confidently grow into responsible young adults.” (Debold et al., 1993, p. 156).

As previously noted, adolescent girls are at high risk for several psychological, social and physical problems (Pipher, 1994; Mann, 1994). Unfortunately, mothers also have a tendency to suffer psychological damage as a result of the intense conflicts and connectedness to their adolescent daughters (Apter, 1990). Where then is the good news for mothers and daughters? Although the task of negotiating a relationship between a middle aged woman and an adolescent daughter is often difficult, the shared human intimacy is the good news and the reward. It is in this same alliance of mothers and daughters that most women report their most enthusiastic emotional encounters. Significant female writers such as Gilligan (1982), Chodorow &

Contratto (1982), Mann (1994), and Pipher (1995) emphasize the importance of the relationship between mature women nurturing younger women. This task is often ambiguous and painful but it is also full of love and personal rewards. Generational mismatches can occur with the result being disharmony but it remains the task of the mother to support her daughter through the years that Pipher calls the “sapling in a hurricane” (1994, p.17).

#### Mothers as Facilitators of Self-Esteem and Competence

Self-esteem develops as a function of the accumulated interactions with significant others in one's life (Blyth & Traeger; 1988). Based on previously reported studies, mothers play a major role as “significant other” to adolescent daughters (Apter, 1990; Bell & Bell, 1983; LeCroy, 1988; Youniss & Smollar, 1985). Blyth and Traeger (1988) reviewed several studies which “...provide evidence of the importance of supportive relationships with parents for positive self-esteem at a variety of ages during adolescence.” (p. 175). In their study of 1,617 adolescents who were living with both parents, results indicated both girls and boys perceived intimacy with parents were significantly related to self-esteem, and furthermore, girl's perceived intimacy was greater with mothers than with fathers (1988). Manscill and Rollins (1990) also found a relationship between parental behavior and adolescent self-esteem. Specifically, they reported that parental supportive behavior was positively related to adolescent self-esteem; in addition, it strongly predicted the youth's self-esteem and indirectly influenced academic achievement. Manscill and Rollins (1990)

suggested that if parents wanted to change their teen's academic achievement, "...they should interact with them in a warm, nurturing manner. Further, parents should avoid harsh, punitive forms of discipline." (p.111). This style of parenting will enhance the adolescent's feeling of adequacy and self-confidence (Manscill & Rollins, 1990).

In reviewing past research, LeCroy (1988) notes that attachments to parents are significantly related to adolescent self-concept and well-being. The results of his research also confirmed the relationship between well-being and self concept. Galambos, Sears, Almeida & Kolaric (1990) found that adolescents developed poorer self-images when they felt less accepted by their mothers.

#### Other Influences on Girl's Self Esteem

It is important to remember that factors outside the family also effect an adolescent girl's self-esteem. Many researchers suggest that girl's low self-esteem is a result of societal norms and gender bias (Debold et al.; 1993, Mann; 1994, Pipher; 1994). The Sadkers note that as girls go through school their self esteem plummets and the danger of depression increases (Sadker & Sadker 1994). The American Association of University Women conducted a national survey in 1990 to determine what happens to girl's belief in themselves. "Sixty percent of elementary school-aged girls and 67 percent of boys felt happy with themselves. In high school, only 29 percent of the girls still felt that way, while nearly half of the boys held themselves in high esteem" (Debold et al., 1993,

p.10) The AAUW released another study in 1995 entitled “How Schools Shortchange Girls” which again found that as children progress through school, boys do better and feel better about themselves while girls’ self-esteem and achievement both decline with age. The impact of a mother’s interactions with the adolescent daughter is mediated by the powerful pressure of the popular culture.

In the AAUW study of student’s self-esteem, boys associated their positive feelings about themselves to their view of competence in skills and talents while girls viewed their self-worth in terms of their appearance (AAUW, 1995). Usually competence is narrowly thought of as only school- or work-related. There are few areas in our culture where adolescent girls feel comfortable achieving competence but now as in the past, “education is the classic arena in which women build competencies to move into positions of authority” (Debold et al., 1993, p.194). Physical fitness and participation in sports and outdoor activities help girls achieve another kind of competence and enhance their well-being in the adolescent years (Pipher, 1994). Numerous studies investigating the topic of adolescence use academic competence and specifically grade point average as a outcome measure of adolescent achievement. Self-esteem, emotional adjustment and problem behavior are other ways to judge adolescent outcomes (Lamborn et al., 1991).

Adolescents and their families experience increased stress during the early and middle adolescent years. There is a need to re-negotiate the young

persons autonomy; therefore family debates are usually about control issues. It is difficult for parents to determine the best level of self-determination and independence for the adolescent while providing boundaries for a safe environment. Fear about the young persons emerging sexuality motivate many parents to be more restrictive of an older adolescent's movement than they were when this same adolescent was younger. This may be more apparent in mother/daughter relationships.

Recent research has demonstrated the need for families to be responsive to the changing needs of the adolescent. Parents may implement a range of responses to adapt to these new demands. Adolescents whose families provide a good fit for their increasing need for autonomy demonstrate better outcome measures. In order to know what that fit should be mothers must be willing to "listen to learn" as Debold and her colleagues suggests (1993). Furthermore, too much parental control has been linked to negative changes in the young person's self-esteem. (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan and Iver; 1993).

According to Allison and Sabatelli (1988), who present a differentiation and individuation model of adolescent identity and intimacy development, adolescence is a developmental transition for the family as well as the child. Parents must participate in the individuation process by transforming their roles as parents to accommodate the changing needs of their adolescent child. Family development and adolescent development are presented as

interdependent processes. Allison and Sabatelli suggest that optimum adolescent development occurs when the parents encourage autonomy and individuality in the teen and at the same time promote a comfortable interdependence and emotional support. There is a need for family structure to remain stable as all family members embrace the fundamental changes required during the individuation process of adolescents. The model presented by Allison and Sabatelli links successful adolescent individuation with the capacity for intimacy with parents and future intimacy with peers. Parents and teens must learn to alter their relationship in a way which gives the adolescent the basis for maintaining adult intimate relationships. They describe the characteristics of these “well differentiated” families as having more open and permeable boundaries which allow for flexible negotiation of relationships. The parent-child relationship must become more symmetrical as the adolescent matures but the family system must also provide a secure, intimate connectedness (Allison & Sabatelli, 1988). One term used to define the nature of support, connectedness and attachment between parent and child is synchrony.

### **Synchrony**

In the literature describing the interactions between adolescent women and their parents (most notably with their mothers) three distinct but related aspects of the interactions appear particularly salient. These aspects, support, communication and harmony, have been shown to facilitate development of

self-esteem, competence and adjustment in adolescent women. Other related influences such as positive attachment, and an authoritative style of parenting, are associated with effective parenting as well, and seem to have elements in common with support, communication and harmony. These three characteristics seem interwoven into a resilient fabric of successful mothering behavior. All three characteristics appear to be related to, and in fact, seem to define the superordinate construct referred to as “synchrony.”

“Synchrony has been variously described in the literature as the coordination of movement between individuals in social interactions (Bernieri, Reznick, & Rosenthal, 1988) harmonious and simultaneous responsiveness without merger or loss of boundaries (Brown & Avstreich, 1989), a balance between the perception of being in control and the perception of being controlled, (Watson, 1978), and temporally linked patterns of reciprocation (Newson, 1977). Synchrony can be thought of as the dynamic force that runs from infancy through adulthood.” (Chu and Powers, 1995, p. 454)

Synchrony first appeared in the literature as a descriptor of parent-infant and parent-child relationships (Chu & Powers, 1995). Chu and Powers used a life-span view of development to expand the concept of synchrony into parent-adolescent relationships. They proposed an integrated model for adolescent-parent interactions based on extrapolations of research of synchrony in infancy and childhood. Chu and Powers describe the characteristics of synchronous

interaction between parent and adolescent as frequent turn-taking; mutual problem solving and decision making. This style of parenting seems similar to what many researcher characterize as an authoritative style of parenting in which a parents attempts to guide an adolescent in a rational way. Synchrony in adolescence seems to facilitate the development of efficacy through this shared authority and mutual decision making. Both adult and adolescent must continue to adapt and adjust in the dynamic process of synchrony which honors the stages in the adult and adolescent (Chu & Powers, 1995). Perhaps, synchrony should not be considered a static construct, but an ever-changing range of interactions between two people.

Bernieri et. al (1988) used raters to measure “behavioral entrainment or synchrony” between mother-infant dyads and referred to synchrony as “...the extent of gestaltlike harmoniousness or meshing of interpersonal behaviors...” (Bernieri et al., 1988, p.244). This group of researchers defined “behavioral entrainment” as a concept related to and used interchangeably with synchrony. “We define entrainment as the adjustment or moderation of behavior to coordinate or synchronize with another, similar to the synchronization occurring between members of an orchestra.” (Bernieri et al., 1988, p. 243). Individuals synchronize to “the rhythms or movements of others with whom he or she is interacting.” (Bernieri et al., 1988, p. 243). Although Bernieri et al. used observing judges to perceive the level of synchrony between a mother/child dyad, I will investigate the level of synchrony based on the perceptions of the

mother and daughter themselves. Bernieri and colleagues stated, "Behavioral synchrony, therefore, can be studied as a perceptual social phenomenon, one that is not normally attended to but observable nevertheless." (Bernieri et al., 1988, p. 244). L. Chu (personal communications, April 22, 1996) prefers the use of trained observers to rate the level of synchrony of the mother daughter pair during a video taped situation. This research method has been used with mother and infant pairs but such an artificial setting may not be as effective considering the complex relationship a mother and adolescent share nor would it be practical in a clinical setting. Therefore, this investigation will be based on the perceptions of the individuals involved.

Synchrony, as a construct can be used to describe interactions between any two people in social interaction and specifically between parents and a child of either gender, but I will use the term to describe the mutual and responsive interaction between mothers and adolescent daughters. Further, I will operationalize synchrony by developing measures of its hypothesized component parts: support, communication and harmony.

### Support

The perception by both the mother and the daughter of being supported is essential in a synchronous mother/daughter relationship. Support is based on and flourishes in a relationship which is secure and attached. Interactions described as "synchronous" have been found to predict secure attachments and are linked to measures of adjustment years later (Chu & Powers, 1995).

According to Chu, synchrony is the mutual and responsive interaction between the child and the parent (usually the mother) which is essential for the child's future development of secure attachment, a sense of autonomy and social competence. Synchrony has been linked to attachment in studies which described harmonious interactions between mothers and infants and mothers who were more sensitively responsive to their infants.

Mother and daughter synchronous interactions may serve to reinforce a secure attachment between the dyad as well as create an environment where the adolescent's self-esteem and social competence is enhanced. Bartle et al. suggested that "...a mother's use of reason and encouragement of autonomous decision making within an emotionally supportive relationship..." would provide the basis for the adolescent female's successful individuation (1989, p. 295). Manscill and Rollins (1990) found parental support and parental coercion influence self-esteem, which in turn influences academic achievement. Research has shown that the stronger the adolescent's relationship is to their parent the higher the individual's self-esteem (Blyth and Traeger, 1988). More specifically, Blyth and Traeger (1988) found that for females, intimacy with the mother was a stable predictor of self-esteem. I use the term support to describe several related facets of the mother/daughter relationship including attachment, intimacy and closeness. Support, then, is a fundamental component of synchrony.

## Communication

Good communication is necessary to establish a synchronous mother/daughter relationship. As reported earlier, mother and daughter attachment and mutual support is achieved and maintained predominately through communication. Verbal interchanges which foster reciprocal understanding and talks which include the sharing of experiences are behaviors which mothers and daughters employ to create a high level of synchrony. And synchrony is fundamental to human speech and language development and has been found to help adjust smooth and effective conversation (Bernieri et al., 1988). The presence of synchrony in a relationship communicates interest and approval to each person in the dyad. This circular process is reciprocal and cumulative. For example, mothers who experience a high level of synchrony with their infants may find later communication with these young adolescents to be easier than mothers who had asynchronous interactions with their infants.

Apter (1990) observed mothers and adolescent daughters maintaining their connectedness even through arguments and negative verbal outbursts. Youniss (1983) described intimate mother/daughter conversations as being a token of their personal involvement and emotional commitment to each other. Chu and Powers (1995) advise adults to practice active listening rather than insisting on being heard and to maintain frequent and high quality interactions with their adolescent child. This emphasis on verbal communication between

mothers and daughters is the same message given to mothers by Pipher (1994), Mann (1994), Debold et al. (1993) and Elum & Elum (1994). Listening is an important aspect of communications. Debold et al. (1993) encouraged mothers to listen to learn from their daughters and Pipher (1994) wrote that girls need "...sincere, total, nonjudgmental listening..." (p.254). Jeanne and Don Elum wrote in Raising a Daughter, (1994) " females use conversation to enhance intimacy, to give and receive support and to reach consensus" (p.22).

### Harmony

Certainly, mothers and adolescent daughters moving about so closely in each other's lives are exaggerated versions of the image produced by the phrase, "the coordination of movement between individuals in social interaction," quoted earlier in this paper as a characteristic of synchrony. All of the previous research point to the need for the mother/daughter pair to be in harmony and responsive to each other's needs "without merger or loss of boundaries". Synchrony describes both the quality of the mother/daughter relationship and in particular the degree of harmony present as the mother and daughter interact with each other. When harmony is present in the day to day contacts and interactions, each individual experiences more joy and satisfaction. Harmony is an important component of synchrony best observed by acts of responsiveness to the other person's needs. When optimal synchrony exists in the mother/daughter relationship both women enjoy a

secure strength and the presence of harmony enhances their shared experience.

The weaving of the related concepts of support, communication and harmony into the superordinate construct of synchrony provides an inclusive and workable description of a fundamental aspect of the mother/daughter relationship. Research on the “synchrony” of mother and infant interactions provides a basis for the current investigation into mother and adolescent daughter synchrony, as does the literature describing the importance of perceived support, attachment, and communication. Although the literature contains discussions of the various components of synchrony, to date, there has been no attempt to operationalize synchrony as a superordinate construct and to define the components in a specific manner.

### **Summary and Rationale**

It has been established that adolescent girls are at high risk for both physical and psychological hazards (Pipher, 1994; Mann, 1994). An important factor which may limit those risks include the type of family support the girl experiences (Bartle et al., 1989; Lamborn et al., 1991; Eccles & Elum, 1994), especially the relationship she has with her mother (Apter, 1990; Silverberg & Steinberg, 1987; LeCroy, 1988; Papini et al., 1990). It has been suggested that the relationship between mother and daughter can be characterized as synchronous or asynchronous. That is, if the relationship is harmonious, supportive, and filled with reciprocal communications, (synchronous), the

daughter may face the challenges of adolescence with more success than peers who have less synchronous relationships (Chu & Powers, 1995), and may develop a better self-concept and exhibit more success academically. On the other hand, if the relationship is characterized by less harmonious, less supportive, and less communitive interactions than peers she may exhibit correspondingly less success and poor self-esteem. To date, there has been no good operationalizations of the construct of synchrony for adolescent families. Consequently, there has been no investigation of the relationship between synchrony in the mother-adolescent daughter relationship and self-esteem and academic competence. The purpose of this study is to operationalize synchrony and to examine synchrony in mother- daughter relationships to determine how it may be related to the adolescent girl's self-esteem and competence. Findings will be of value to health care providers such as counselors, psychologists, psychiatrists and pediatricians as well as to educators and other professionals providing both direct and consultative services to adolescents and their families.

### Research Questions

There is a need to develop a psychometrically sound instrument to assess synchrony in the mother-daughter relationship. Using that instrument, the relationship between synchrony and self-esteem and competence can be investigated. Research questions and specific hypotheses which guide the research are:

1. Does the Mother-Daughter Synchrony Scale (MDSS), developed by Gross and McCallum for this study, provide a psychometrically sound assessment of synchrony? Specific questions include: (a) Do the three subscales of the MDSS (support, communications, harmony) exhibit acceptable reliabilities ( .60 or above)? (b) Do items “load” on three factors which correspond to the subscales of the MDSS (support, communications, harmony) as predicted (.40 or above)? (c) Does the scale yield support for a three-factor structure, as predicted? (d) Is there support for validity scales, consistency (C), fake good (L), and fake bad (F)?

2. What relationship exists between the daughter’s perception of synchrony and the daughter’s self-esteem and competence? Specific related and supporting questions include: (a) What is the relationship between daughter’s perception of synchrony and her self-esteem? (b) What is the relationship between the daughter’s perception of synchrony and the daughter’s competence as defined by school grades? Based on the literature, a strong positive relationship between perceived synchrony and the adolescent daughter’s positive self-esteem and competence is predicted.

## **CHAPTER II**

### **METHOD**

#### **Subjects**

Adolescent daughter and mother dyads were recruited to be participants of this research through both the public schools and area church youth groups. The first phase of recruitment was conducted at two high schools during the month of May, 1996, and the second phase of recruitment was conducted at three churches, during June and July, 1996. The girls who were recruited from church youth groups during the second phase attended both middle schools and high schools but demographics about their schools were not gathered. Both the girls and their mothers were invited to participate in the research. Adolescent participants were 212 females ages 11 to 19, enrolled in two public high schools and several public middle schools in an East Tennessee school district located in a metropolitan area of approximately 300,000. Exact socioeconomic data was unavailable from the school district, however, according to a school district official, the system typically uses the percentage of student on free or reduced lunches as a measure of socioeconomic levels. The mean percentage of students on free or reduced lunches for the ten high schools within this system is 18.6%, and for the two high schools represented in this study the mean percentages are 30.2% and 2.1% respectively. Using this information combined with the mother's educational levels of this sample, it was judged that the majority of the students were from average and above average

socioeconomic backgrounds. According to school district census data, the population of the first high school at the time of data collection was 80% Caucasian and 20% African American and the population of the second high school was 96% Caucasian and 4% African American. The church youth group populations, as reported by each of the church youth directors, was 100% Caucasian.

### Daughters

In the participating sample of female adolescents, 79% were Caucasian; 18% were African American; 3% endorsed the "Other" category. Two percent of the girls were age 11, eight percent were age 12, nine percent were age 13, fifteen percent were age 14, twenty-five percent were age 15, seventeen percent were age 16, seventeen percent were age 17, and six percent were age 18. One girl was 19 and one was 21. The mean age of the young women in this study was 15 years, 1 month; the standard deviation was 1.79.

The mothers and daughters were asked to describe their home and family situation. Seventy-nine percent of girls reported they lived with both natural parents. Nine percent of girls lived with biological mother only. Nine percent of girls lived with biological mother and step father. One girl lived with her biological father and step mother. Six girls lived with "other", that is, in a different home situation than described above. The girls reported their grade point average as follows: 25% reported 4.0, 35% reported 3.5, 22% reported 3.0, 12% reported 2.5, 4% reported 2.0 and 3 girls 0 or F as their grade point

average. Grade point average was missing for 32 participants or 15% of the sample.

### Mothers

Participating adult female subjects were the 212 mothers of the girls described previously. "Mother" was operationalized to include natural mothers, step-mothers, or another female relative such as a grandmother, aunt or significantly older sister. The criteria required that this mother or mother figure must have lived with the daughter more than 50% of the time for at least the last 6 months and the daughter must have considered the older woman to be her primary female caregiver and nurturer. Mothers could participate in the data collection for up to three daughters. Mother's mean age was 44. The youngest mother was 29 and the oldest was actually a grandmother of the participating daughter who was 65. Mother's average years of education was 16 years or four years of college. Three mothers completed only 8 years of schooling and 57 mothers completed 12 years of school. 65 mothers or 30 % completed four years of college and 86 mothers or 40% of the mothers completed more than 16 years of education. In the participating sample of female adults or mothers, 79% were Caucasian; 18% were African American and 3% endorsed the "Other" category.

## **Instruments**

### **Synchrony Measure**

The Mother Daughter Synchrony Scale (MDSS) was developed for this study by Gross and McCallum. The MDSS measures both the daughter's and the mother's perceptions of the level of synchrony in the mother/daughter relationship. Items were generated after a review of the synchrony and adolescent/parent relationship literature. An attempt was made to write items which would reflect the model of adolescent synchrony presented in the literature (e.g. Chu and Powers, 1995). The original MDSS, used in a Pilot Study, contained 132 items to which the subject responded using a Likert Scale: strongly agree; agree; sometimes agree / sometimes disagree; disagree; strongly disagree. Items were written to reflect a variety of situations describing mothers and daughters interactions. The MDSS contains three subscales which correspond to the components of synchrony: support, communication and harmony. There were 34 items in each subscale in the original MDSS.

The MDSS is presented in two forms; the first is completed by the mother and the second is completed by the daughter. The Daughter Form provides a self-report format for the daughter to record her perceptions about her mother's behavior and the relationship they share together; the Mother Form provides a format for the mother to report her perceptions about the daughter's interactional behaviors with the mother and their shared

relationship. In an effort to detect invalid results in an individual's responses, three validity scales were constructed within the original MDSS. These scales are: consistency, fake good, and fake bad. Positively and negatively worded items were written to reflect the same opinion or situation and provide evidence of inconsistent responses on the consistency scale. Items in the "fake good" and the "fake bad" scales were written to detect response sets that may be characterized as either social desirability or an unusually high frequency of negative responses in describing the level of synchrony in the relationship.

A pilot study was conducted to refine the Mother Daughter Synchrony Scale (MDSS). The instrument was reviewed by one faculty member (with an expertise in instrument development) prior to the pilot study phase and further revisions were made at the conclusion of the pilot study. Thirty-two mother-daughter dyads were recruited as participants in the pilot study. Pilot study data were analyzed to determine item selection based on item-scale correlations, fit of items to the predicted factor structure, and scale reliabilities. The second item selection process was based, in part, on item loading from a principal components factor analysis with varimax rotation. The criterion of a factor loading of .40 or better was used for item selection. An exception was made for one item which failed to meet the criteria; in order to preserve the content, the item was retained in the scale and rewritten for additional clarity. The fake good and fake bad items were eliminated from this factor analysis. Reliability data were obtained on each of the subscales. The Cronbach's Alpha for

Harmony was .86; Communication was .91 and Support was .86. For the retained items, item-total subscale correlations ranged from .42 to .82 for Harmony, from .39 to .75 for Communication and from .34 to .76 for Support.

The second generation of the MDSS (see Appendix A), which was used to collect data for the main study, contained 64 items. Eighteen items were retained in each of the subscales, Harmony, Support, and Communication. The fake bad and fake good scales consisted of five items each. Of the original twelve pairs of consistency items which were in the original MDSS used in the pilot study, only three pair were retained in the refined MDSS and used in the main study. Hence, almost all of the consistency scale items were eliminated during the item selection process after the pilot study data was analyzed, and were inadvertently left out for the main study. This oversight in the item selection process eliminated the use of one of the validity scales (consistency). Results from final item analysis are described in the Results section (Chapter III). These analysis are based on data from a principal components factor analysis with orthogonal (Varimax) rotation.

#### Self-Esteem Measure

The Behavior Assessment System for Children (BASC) by Reynolds and Kamphaus (1992) was administered to the first 100 mother-daughter subject dyads in the main study only. The BASC provides a measure of self-esteem and other pertinent information. The Self-Report of Personality (SRP-A) of the BASC for adolescents ages 12-18 was administered to daughters and parts of

the Parent Rating Scale for Adolescents (PRS-A) of the BASC was administered to mothers. The parent-informant rating scales of the BASC uses a multi-point item choice while the self-report for the adolescent uses true-false items. The self-esteem scale of the SRP-A was used as the measure of self-esteem and is the only data from the BASC to be reported in this study. Two types of reliability are reported for the SRP-A using both gender and age levels; the internal consistency for the self-esteem scale for females ages 12-14 is .88 and for females ages 15-18, .86 (Reynolds, 1992, p.156). Test-retest reliability for the SRP-A, self-esteem scale is .84 (Reynolds, 1992, p.158). Kline (1995) reported "Results of many studies, however, suggest that self-reports from children and adolescents can provide unique, useful information." (p. 170) The SRP-A was chosen by the investigator over other self-report scales because Kline (1995) reported that it was "more oriented toward the assessment of self-perceptions...." (p.172); has the lowest reading levels compared to other scales; and the reported normative samples of the BASC were relatively large and representative of the U. S. population using both male and female norms. The female norms were used to score the responses of this group of girls.

#### Academic Competence

Academic competence was measured using the students self-report of their grade point average. Both the mother and daughter respondents wrote their estimation of the daughter's grades based on a standard 4.0 grading scale, though the daughter's estimate was used in the analysis. Research

supports the use of self-report as compared to grades taken from school records. There is a high correlation between what students report as their grade point average and the actual grades taken from school records (Lamborn, 1991).

### **Procedure**

The subjects were initially recruited by mailing a letter to the homes of all the ninth, tenth and eleventh grade female students of two large metropolitan high schools. In the second phase of data collection, letters of introduction and recruitment were also sent to the homes of adolescent girls who were members of three church youth groups. In the case of the first high school recruitment, initial contact was made by phone to those mother daughter pairs who return self-addressed, stamped postcard, to arrange a meeting.

The principal investigator was invited by the administration of the second high school to speak to approximately twenty classes, describing the research and actively recruiting participants. Some teachers at this school chose to give their students extra credit for research participation. Also, at the second high school and at the individual churches, meeting times were arranged with the administrators and announced to the classes and at youth group meetings. Small groups of mothers and daughters were convened to receive instructions, give written consent and to complete the MDSS and the BASC. The BASC was completed by the first one hundred pair of mother and daughter participants. I visited participants in their homes who were unable to attend the group

meeting, but who expressed a willing to participate. These participants were given the information and the needed materials and, in all cases, completed the materials in my presence.

All participants were involved in the study for approximately one hour; they listened to the researcher describe the research and give instructions, and were given the opportunity to ask questions before completing the survey instruments. Several small group meetings were scheduled after school hours at both high schools in an effort to provide ample opportunities for potential subjects to ask questions about the study and receive an explanation of both informed consent and the procedures used to protect subject confidentiality. Packets containing (a) description of the study, (b) the demographic information requested from the participants, (c) the informed consent statement from both the mother and the daughter and (d ) the Mother-Daughter Synchrony Scale (MDSS) and the Behavior Assessment System for Children (BASC) were distributed to the female students and their mothers at these meetings. Participants were instructed to put no identifying information on the protocols. Students were asked to provide a self report of their academic performance (i.e. grade point average); also, the mothers were asked to provide a report of their daughter's academic performance. Following data collection, all forms were returned. Several meetings were scheduled at both high schools for the collection of data. These meeting were held in the cafeteria and in the school

library. Several meeting were also scheduled at each of the three churches for the purpose of data collection.

At each meeting, just prior to the collection of data, the written informed consent statement was reviewed and confidentiality discussed. This statement was attached to the MDSS and contained elements of consent and a statement that completion of the questionnaire constitutes consent to participate.

Questions about the study were addressed. The subjects were asked to complete the MDSS and the BASC anonymously. Participants were instructed to complete these instruments silently in my presence and I disclosed any discussion or sharing of the content. Participants were asked to sit where no one else could see their responses and upon completion, the materials were returned. The MDSS was designed to measure both the daughter's and the mother's perceptions of the level of synchrony in the mother-daughter relationship. The BASC provided a measure of self-esteem and other pertinent information.

### Data Analysis

The following data techniques were used to determine if the Mother-Daughter Synchrony Scale (MDSS) provides a psychometrically sound assessment of synchrony.

1. (a) To determine if the three subscales of the MDSS (support, communication and harmony) exhibit acceptable reliabilities for research instruments, (.60), Chronbach's Alpha were calculated. (b)To determine if items

loaded on to the three subscales of the MDSS as predicted (.40 or above), a factor analysis was conducted using a principle-axis analysis with an orthogonal (varimax) rotation. (c) To determine if the scale provides support for a three-factor structure as predicted, an examination of the factor analytic data obtained in (b) above was examined using eigen values, a scree plot and rational criteria. (d) Item frequencies were tabulated to establish occurrence of “unlikely frequencies” for validity scales.

2. (a) Correlational coefficients were calculated between each subscale of the MDSS and the synchrony composite score as measured by the total MDSS, and the self esteem measure scores of the BASC. (b) Correlational coefficients were also calculated between synchrony scores and competence as measured by each daughter’s reported grade point average.

## **CHAPTER III**

### **RESULTS**

Two primary and several secondary research questions were addressed. The first question focuses on determining the basic psychometric properties of the MDSS, particularly the factor structure and reliability of the scale. The second question focuses on the relationships between mother-daughter synchrony and the adolescent daughter's self-esteem and her competence as measured by grade point average. These two primary questions and related secondary questions are addressed in turn. In some situations the data are presented separately for the mothers and for the daughters.

Before the research questions were explored, the effects of the family structure of the participants was examined to see if differences occurred among groups on the level of mother-daughter synchrony. A three way Analysis of Variance was conducted among the following groups: girls who lived with both biological parents ( $n = 168$ ); girls who lived with biological mother only ( $n=19$ ) and girls who lived in any other family structure ( $n=25$ ). The analyses revealed no significant difference among total Mother Daughter Synchrony Scale mean scores. ( $F [2, 209] = .09, p>.05$ ). Consequently, all further analysis was conducted on the participants as one group.

#### **Research Question 1**

Does the Mother-Daughter Synchrony Scale (MDSS), developed by Gross and McCallum for this study, provide a psychometrically sound

assessment of synchrony? (a) Do items “load” on three factors which correspond to the subscales of the MDSS (Support, Communication, Harmony) as predicted (.40 or above)? (b) Do the three subscales of the MDSS (support, communications, harmony) exhibit acceptable reliabilities (.60 or above)? (c) Does the scale yield support for a three-factor structure, as predicted?

#### Mother Daughter Synchrony Scale Development.

Following the pilot study phase of this investigation (See Chapter II) the original MDSS containing 132 items, was revised based on several psychometric criteria. The second generation of the MDSS was administered to the 424 participants of the main study, and that revised scale underwent similar examination of its psychometric properties. Selection of the strongest items from each of the subscales occurred primarily by examining factor analytic data.

It was predicted that factor analysis of the MDSS would yield three factors: Support, Communication and Harmony. A three factor solution was obtained using Principal Components analysis with orthogonal (Varimax) rotation. This analysis was used to determine items loading on the subscales, Harmony, Communication and Support. Factor loadings provided support for the proposed three factor model, using the criterion of .40 as representing a significant item-factor loading. The second generation of the MDSS, described in Chapter II, contained 18 items per scale; however, based on the factor loading criteria, only 11 items per scale were retained for the final analyses.

Table 1\* reports the final three factor solution for mothers and daughters combined. Tables 2 and 3 report the final three factor solutions respectively for mothers and for daughters separately. Factor loadings provide support that the MDSS measures the three hypothesized factors, Support, Harmony and Communication. The eigenvalues were markedly higher for the first factor than for either the second or the third factors for both the mothers and the daughters. In an examination of the eigenvalues for the mothers the three highest values were, 11.65, 2.24, and 1.93. For the daughters, the three highest eigenvalues were 12.18, 2.74, and 1.99. The three factor model was supported further by examining the scree plot which revealed a clear break between the highest three eigen values and the rest for both the mothers and the daughters.

The mean global Synchrony score for mothers, ( $\bar{X}$ = 129; SD= 15;) is slightly higher than for daughters ( $\bar{X}$ = 125; SD= 18). Means and standard deviations for each of the three subscales of the MDSS are presented for mothers and daughters separately in Table 4. There appears to be more variability within scales for daughters than for mothers. Paired t-tests were conducted to examine the means of paired differences between mother's and daughter's responses on each subscale. Mother's perceptions of both Harmony and Communication was significantly higher than their daughter's ( $p < .05$ ). Daughters perceived Support significantly higher than mothers ( $p < .05$ ).

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\* All tables may be found in Appendix B.

The psychometric adequacy of the MDSS was further evaluated by obtaining reliability data on each of the subscales; these data are reported for the mothers and for the daughters separately. The Cronbach Alphas for each of the subscales for mother's data are as follows: Harmony, .80; Communication, .90; Support, .87. Cronbach Alphas for daughters are: Harmony, .88; Communication, .86; Support, .91.

Item-subscale correlations were obtained also. Correlations for mothers are in Table 5 and range from .40 to .77 with one exception. Item number 21, "My daughter worries about me too much." had a correlation of only .02. Item-subscale correlations for daughters are in Table 6, and range from .40 to .79, again with one exception. In the case of the daughters, item number 21, "My mother worries about me too much." had an item-total scale correlation of .30.

Pearson Correlation coefficients were calculated to show relationships among the scales for both the mothers and the daughters. Table 7 contain these correlation coefficients. These figures are relatively high and suggest considerable overlap among the constructs.

## **Research Question 2**

What relationships exist between mother-daughter synchrony and the adolescent daughter's self-esteem and competence? Specific related and supporting questions include: (a) What is the relationship between synchrony and a teenage girl's self-esteem? b) What is the relationship between

synchrony in the mother daughter relationship and competence as defined by school grades?

#### Synchrony Score, Self-esteem and GPA

The variables used to describe the level of synchrony between the mother and the daughter is the Total Synchrony score and scores on the Harmony, Communications and Support scales for both mothers and daughters. The daughter's self-esteem was assessed by the Self-Esteem Scale from the BASC. Means and standard deviations for the daughter's Synchrony and Self-Esteem Scores and GPA are presented in Table 8. Means for the Synchrony scales separately are presented in Table 4.

Pearson Correlation coefficients were examined comparing the Total Synchrony score and Harmony, Support and Communications with both Self-esteem and GPA. Table 9 contain these correlation coefficients. There are high positive correlations between Support, Harmony and Communication and total Synchrony. Relatively low but significant positive correlations exist between self-esteem and Support, Harmony and Synchrony; no appreciable correlation was found between self-esteem and Communication. Low but significant positive correlations were obtained between GPA and Support, Harmony, Communications and Synchrony. In fact, all correlations were significant at the  $p < .05$  level except those between Self-Esteem and GPA and Self-Esteem and Communications.

## **CHAPTER IV**

### **DISCUSSION**

The purpose of this study was to develop a psychometrically sound measure of mother/daughter synchrony, the MDSS, and to examine its relationship to the daughter's self-esteem and academic competence. Development of the MDSS will be discussed, followed by discussion of the relationship between it and self-esteem and competence.

#### **Development of the MDSS**

Research Question 1 addressed the development and psychometric adequacy of the MDSS. The relatively strong three-factor structure and robust reliabilities of the MDSS scales provide evidence in support of the utility of the MDSS as a measure of mother/daughter synchrony. The solid three-factor structure of the scale provides evidence that synchrony in the mother/daughter relationship can reasonably be defined by the subordinate constructs of Support, Communications and Harmony. The items written for the scales of Support, Communications and Harmony represent a good fit.

#### **Synchrony**

Although synchrony can be conceptualized as a shared human experience, it may be perceived differently by the participants. Responses of the mothers and the daughters of this study reflect their unique perceptions of the level of synchrony in their own relationship. Overall, mothers reported a slightly higher level of synchrony than did the daughters. Specifically, the

molecular pattern shows that mothers perceived the level of harmony to be much higher than daughters. On the other hand, daughters felt a greater degree of support in their relationship with their mothers; the mothers reported feeling less supported than the daughters.

Because it is important to identify ways to enhance the developing young woman's experience and positively affect her development, it is helpful to identify supportive and harmonious mothering behaviors. For that reason, this study places more emphasis on the daughter's perception of synchrony rather than on the mother's. However, due to the reciprocal nature of synchrony, it is also important to consider the mother's perceptions. When the mother's needs are not being met in the relationship, her resulting negative attitudes and behaviors will affect both the harmony and the communications of the interactions. Hence, synchrony is assumed to result from a dynamic interaction. Chu and Powers (1995), who referred to synchrony as a dynamic force, concluded that the young person in a highly synchronous relationship with parents has a better chance of meeting the challenges of adolescence with success. Support, harmony and communications appear to be fundamental elements of synchrony.

#### Support.

Support, as one fundamental component of synchrony, is used here to characterize attachment, intimacy and closeness between a mother and daughter. For example, items which loaded highly on the Support scale were:

“My mother/daughter loves me the way I am.”, “My mother/daughter listens carefully to my problems.” and “My mother/daughter always includes me.” reflect a sense of being supported, through acts of intimacy and attachment. Gilligan (1982) describes the need for attachment as part of a unique female voice. As a building block of support, attachment can be viewed as effecting an interdependence (Allison and Sabetelli, 1988) and a connectedness (Apter, 1990).

After scrutinizing the data from their study in which they interviewed 100 girls aged, 15 to 17 and their families, Bell and Bell (1983) concluded that a mother’s support for her daughter was positively related to the daughter’s positive self-esteem. Results from a study by Bartle, Anderson and Sabatelli (1989) gave limited support for a hierarchical model of adolescent personal adjustment which links parental style with the adolescent’s self-esteem. They found that it is highly desirable for the daughter to perceive her relationship with her mother as being supportive; this support forms a basis for her future successful individuation and development in many areas of life. (Bartle et al., 1989) Bartle et al. further maintains that if a mother’s interaction with the daughter occurs within an “emotionally supportive” environment, the daughter is better able to negotiate her transition from dependence to separateness from the family. There is also an ongoing need for balance between this adolescent need for individuation and the family’s need for interconnectedness. Perceived support may be one of the end results when this balance is achieved and the

clearest method to achieving this support may be through the act of active listening and showing an interdependence and connectedness. Mary Pipher (1994) challenges mothers to support their daughters through the difficult adolescent years and she further encourages mothers to be willing to “listen to learn”.

Similarly, mothers probably need to feel supported in a relationship. Even though many daughters likely perceive their mother’s needs and act in a supportive and helpful manner (Youniss & Smollar, 1985), the mothers of this study perceived support to be the weakest link in the level of synchrony with their daughters. That is, their Support scale score was significantly lower than their daughters. Apparently, mothers do not perceive much support, which may be natural. Typically young adolescents are very demanding, more involved with peers than parents, and less introspective about and concerned with relationships with parents.

Mothers in my study represent a very highly educated group of women from the “Baby Boomer” generation, women who have invested much effort into their chosen professions. They may have been away from their homes more than previous generations of women. Consequently their adolescent daughters may see them as independent and capable, needing little support. Ironically, today’s mothers may actually need more support from their daughters than mothers from previous generations. Women in the past may have experienced more supportive contact with other women (and their daughters) through the

extended family and community involvement. Modern women do not have the time or proximity for as much mutual support from other woman. This seems paradoxical because they may need it more due to so many demands. Currently, our families are more mobile, smaller and a higher percentage are headed by a single parent, usually the mother, who has a full time job and dependent children (Mann, 1994). Stress is high and time is extremely limited. If this shift in the role of the woman and the structure of the family has cut off some of the traditional sources for female attachment, it follows that the adult woman may look to her closest, most convenient female kinswoman, her daughter, to fulfill that need for specific female support. This may create undue pressure on the daughter. If the reciprocal support is not felt by both mother and daughter an imbalance occurs, which may result in disharmony and negative communications.

For the mothers, support was highly related to communications and moderately related to harmony. For the daughters, support was more highly related to harmony, but also moderately related to communications. Perhaps mothers feel more supported by their daughters if there is open communications and daughters feel more support when there is harmony in the relationship. In examining the specific item content and the factor loading data for each of the subscales, links among the subscales were obvious. Items with the highest loadings on the Support subscale for both mothers and daughters frequently contained the word "listen". Out of eleven final Support items on the MDSS, five

included the word “listen” and two more implied a willingness to listen. Thus, the most salient behavior to transmit a sense of support, attachment and intimacy is listening. Mothers felt support when their daughters “listened till I’m finished talking” while daughters perceived support when their mothers appeared to be “interested in what they had to say” and “were not too busy to listen”. Both mothers and daughters frequently endorsed the item: “My mother/daughter takes time to listen to me.” Mothers who felt support also endorsed highly “My daughter helps me when I ask.” Thus, support between mothers and daughters is best manifested in the simple behavior of listening. But when mothers believe that they are not “heard”, they may lack a sense of connectedness to their daughters and feel less supported.

#### Harmony.

Harmony is the second fundamental component of synchrony. Synchrony has been described in the literature as the “harmonious and simultaneous responsiveness without merger or loss of boundaries” (Chu & Powers, 1995, p.454). Other researchers observing mothers and infants refer to synchrony as a “gestaltlike harmoniousness or meshing of interpersonal behaviors” (Bernieri et. al, 1988. p.244). This contentment and flow in a relationship is best described using the construct harmony. Just as musical notes are responsive to other notes and their interplay can produce either beautiful chords, phrases and melodies, or horrible, dissonant noise, so are the individuals in social relationships. Perfect harmony produces lovely sounds in

music and joy and satisfaction in human interactions. Disharmony in a human relationship can result in great emotional pain. Harmony occurs when the first person's actions stimulates a complementary reaction in the second person. The ease and flow of a harmonious relationship is not a static construct but an ever changing series of interactions between two people.

The mothers and daughters of this study reflected on many examples of shared experiences to report their perception of harmony, but they perceived harmony in slightly different ways apparently. In fact, item loadings were considerably different in most cases. The one item loading similarly for both mothers and daughters was: "I enjoy spending time with my mother/daughter." Based on factor loadings, mother seem to perceive a stronger harmonious relationship, if they could "respect their daughter" and to feel as if they could "... be honest" with their daughters. On the other hand, the daughter's sense of harmony is negatively affected if she perceives that her mother is "attempting to control her life" or "worrying about her too much". These data tells us that the boundaries between the mother and the daughter must be intact and each person must be able to be honest and genuine.

Mothers perceived a significantly higher level of Harmony than did their daughters. This was the largest difference between mothers and daughters among all the subscales. Apparently the mothers of this group felt they could be honest with and have respect for their daughters; also they expressed desire to spend time with them. The daughters sense of harmony may have been

undermined by their own perception of the their mothers worrying and controlling their lives. Mothers imposing limits may be very under appreciated by their daughters.

Using the metaphor of the musical instrument again, the strings can not make their own true sound if they are touching each other, but when they both contribute their own sound, a harmonious chord occurs. Similarly, the voices of both the mother and the daughter must be heard in the relationship. One voice can not overpower the other in this delicate interpersonal balance or the results may be dissonance and a lack of harmony. As this data shows, listening to the other's voice is the most important behavior to establish harmony in the relationship. Honesty, respect and a desire to be together must be transmitted between the mother and the daughter; only then can a harmonious chord be struck.

#### Communications.

Synchrony, attachment and mutual support can only be maintained through good communications. Mothers and daughters who share their lives and experiences through verbal exchanges contribute to the mutual perception of synchrony. As with the other subordinate constructs, communication's connection with other elements of synchrony appears to be circular, reciprocal and cumulative. Positive communications between mother and daughter will nurture the synchrony in their relationship. Even when the verbal exchanges have a temporary negative emotional affect, it may be better to be talking than to

be silent. Arguing may be more beneficial to the health of the relationship than holding the negative feelings in isolation. In fact, Apter (1990) stated that mothers and daughters maintain their connectedness through arguments. Ongoing conversations between mothers and daughters are the tokens of their involvement and commitment to each other (Youniss, 1983). Many other researchers emphasize the importance of parents listening to their daughters and listening is, of course, a fundamental aspect of communications. "A daughter who is heard, respected, and honored within her family as a full and complete person will stand a much better chance of demanding the same treatment from the world." (Mann, 1994, p.276). Mary Pipher reminds her readers that adolescents need as much parental time as toddlers and advises parents to be available to listen to their daughters whenever they are ready to talk (Pipher, 1994). Elizabeth Debold et al. suggest that a mother must give her daughter permission to voice her experience of reality and then "join" with her further by "amplifying her daughter's voice with her own". (Debold et al., 1993, p.155)

In the construction of the MDSS, many items were written to reflect the experiences of communication. Analysis of the factor loading data revealed that many of the items intended for Communication loaded heavily on Support. As stated earlier, there was a high correlation between the Communication and Support subscales. Both these scales relied heavily on items which described verbal exchanges, but an interesting difference was observed. Communication

items tended to use the words “tells”, “talks” and “shares” while the Support items used the word “listen” repeatedly. The content of frequently endorsed Communications items described the mother and/or daughter talking about the everyday occurrences. For example, items which were most salient for both mothers and daughters include, “My mother/daughter tells me about work and school.”, “...talks to me about her friends.”, “...shares her experiences.”, and “...tells me about the activities of she and her friends.”.

Communications includes the verbal exchanges between mothers and daughters which contribute to their sense of synchrony. Communication items included the more active aspect of communications and describe the pair verbally sharing the events of their lives. While the mother’s level of communication was significantly higher than the daughters it was the smallest difference of all subscales. This reveals the more reciprocal nature of communication.

### **Self-Esteem and Competence**

Research Question 2 addressed the relationship between Synchrony, self-esteem and competence. Correlational analyses generally provide limited support for the predicted relationships between Synchrony, measured by the subscales of the MDSS, and self-esteem, measured by the Self-Esteem scale of the BASC. Correlational analyses also provide some support for the predicted relationship between Synchrony and competence as defined by the girl’s self-report of her grade point average (GPA).

### Predictors of Self Esteem

Literature supports the presence of a strong relationship between the parent/adolescent interaction and the young person's self-esteem (LeCroy, 1988). Manscill and Rollins (1990) concluded parental support and coercion influence self-esteem, which in turn influences academic achievement. More specifically, Blyth and Traeger (1988) found that for daughters, intimacy with their mothers was a stable predictor of self-esteem. The current study also provides evidence that a positive relationship exists between synchrony and the daughter's self-esteem. Self-esteem was significantly related to Synchrony ( $r=.26, p< .05$ ), Support ( $r=.23, p< .05$ ), and Harmony ( $r=.35, p< .05$ ), but only a slight positive relationship existed between self-esteem and Communication ( $r=.08$ ). The subordinate constructs of Harmony and Support seem to be relating more to the daughter's self-esteem. To further explore the relative power of the elements of synchrony to predict self-esteem in daughters, a multiple regression analysis was conducted. In particular, the combined predictive power was investigated. The girl's self-esteem was measured by their responses to the Self Report of Personality of the BASC.

To examine the model proposing that self-esteem is influenced by the specific components of Synchrony the variables of Harmony, Support, and Communication were regressed on self-esteem scores. Results of this analysis is reported in Table 12. Fifteen percent of the variance of self-esteem was accounted for by the set of predictor variables. Only Harmony emerged as a

significant predictor when all other variables were controlled (Beta=.33) accounting for 12% of the variance. Obviously the elements of synchrony do not provide strong predictive power.

#### Predictors of Grade Point Average

The current study also provides evidence that a positive relationship exists between Synchrony and the daughter's grade point average (GPA). Grade point average was significantly related to Synchrony ( $r=.30$ ,  $p<.05$ ), Support ( $r=.20$ ,  $p<.05$ ), Harmony ( $r=.33$ ,  $p<.05$ ), and Communication ( $r=.24$ ,  $p<.05$ ). Although Harmony appeared to be the best predictor each of the scales are significantly related to GPA. To further explore these relationships a multiple regression analysis was conducted using GPA as the criterion variable. Because there is support in the literature for an hypothesized relationship between self-esteem and grades also (Manscill & Rollins, 1990), the multiple regression included self-esteem as a predictor. This model allowed a test of the relative power of the Synchrony variables plus self-esteem.

Results from a hierarchical regression analysis indicates that approximately 2 percent of the variance in GPA is accounted for by self-esteem (Beta= .15). The three Synchrony variables accounted for an additional 17% of the variance in the dependent variable. Both Harmony and Communication contributed significantly to the predictive equation; as is apparent from Table 13. Synchrony variables are more powerful (than self-esteem) as predictors of GPA.

### **Implications for Further Research and Practical Use of the MDSS**

There is considerable evidence to support the psychometric properties of the MDSS, it seems to be a relatively good measure of mother/daughter Synchrony. As such, it is appropriate for use as a research instrument and has promise as a clinical tool. The research discussed here represents a significant contribution toward understanding the synchronous interactions between mothers and daughters of this particular demographic group, but further research using the MDSS is necessary. The women participating in this study were primarily middle-class/ upper-middle class European-Americans living in or near a mid-sized Southern city. Some care must be taken when interpreting the results from the present study because this group of mothers and daughters represent a specific population of highly educated middle-aged women and well-adjusted, high achieving, young women who all live in a prosperous suburban setting. Furthermore, a large portion of this sample was drawn from adolescents affiliated with religious youth groups. Families with ties to religious organizations may hold unique value systems when compared to the general population. Their responses to the MDSS may differ from women of different ethnic and socio-economic levels or from those in other parts of the country.

Further research using the MDSS should be done with a more diverse sample of women of various races, cultures, and economic levels who live in various geographic locations. In addition, according to the results from the

BASC, this sample of young women appeared to be well-adjusted; therefore, more information from girls who would be considered more at-risk would be beneficial. For this reason, future research on the MDSS should include clinical populations drawn from private practitioners, alternative public schools designed to educate emotionally disturbed students, drug rehabilitation facilities, and from hospitals serving young female patients with eating disorders. It would also be advantageous to conduct research comparing the MDSS with other instruments measuring parental/adolescent relations such as the Social Relations Questionnaire (Blyth & Traeger, 1988) or the Child's Report of Parental Behavior Inventory (Galambos, et al., 1995).

Mothers and daughters in different living situations and family structures may relate in different ways. There is a need for more research using the MDSS in this area. In the present study, an initial effort was made to explore the effects of the daughter's family structure on synchrony. The mean synchrony scores of three groups of girls in this study were compared via t-tests. The first group, which consisted of 79% of the girls, lived with both biological parents. The second group, 9% of the girls, lived with their biological mothers only, and the third group of 12%, lived in a variety of family combinations. There was no statistically significant difference among these groups on any of the daughter's Synchrony scores (i.e. Harmony, Communication and Support). The living situation of these girls appears to be independent of the level of Synchrony with her mother each perceived. This implies that a daughter in a

single parent home is no different from a daughter in a two parent family in their level of synchrony with their mother, but a more comprehensive investigation is needed with a more diverse group of women.

The MDSS examines the quality and quantity of communication, support, and harmony between mother and daughter and provides a measure of overall synchrony in the relationship. The projected purpose of the MDSS is as an initial screener for clinical populations. Girls who are experiencing eating disorders, self-mutilation, suicide, school phobic, chronic academic under-achievers, chronic illnesses and are referred for psychological help make up this group. The MDSS could be used by practitioners when a family member referred a young woman for therapy. The initial identification of the young woman's perceived level of support from her mother and the nature of their shared communications and the degree of their harmonious interactions would create a rich tapestry of information for the therapist to analyze. Initial intervention strategies could be designed based on the results of the MDSS from both the mother's and daughter's viewpoints. Information from the MDSS could inform practitioners in institutions such as hospitals, schools and therapeutic centers. For example, practitioners may wish to involve the mother in the day to day interventions of the daughter and assist both the mother and daughter in understanding and improving their relationship. In an era when both public and private institutions are attempting to shift the responsibility for deviant youth back to the parent, it is important to identify specific guidelines for

effective parenting. The MDSS has the potential to yield important information such as levels of mother/daughter communications and daughter's perceptions of support. When this information is linked with a prescribed strategy of behavior modification on the part of the mother and the daughter, subsequent changes may occur in the level of synchrony. The outcome of increased synchrony as shown by this initial research, may be increased self-esteem and academic competence.

Young women need the support of their mothers but mothers may need guidance in developing supportive and harmonious mothering behaviors. There exists a need in the general population for more specific guidance in the nurturance and specifically, the mothering of adolescent girls, as described by Pipher (1994). One way to address this need may be through mother/daughter relationship seminars. The MDSS could be used as a screening tool in seminars for mothers and daughter interested in improving their relationship. Given to participants at the beginning of the seminar, the subsequent information would identify deficits in the level of synchrony specific to each pair of mothers and daughters and provide guidance for communication skill training. As demonstrated by the results of the current study, the relationship between the subscales of the MDSS are reciprocal and cumulative. Thus, changing the pattern of communications between the mother and the daughter could foster a greater sense of shared harmony in the relationship and also produce feelings of mutual support. Finally, the MDSS could be used as a

training tool for professionals and volunteers working with adolescent girls. By examining the components of the relationship the girl has with one of her most important social supporters, her mother, the psychologist, counselor, health care provider or teacher can gain important insights into developing strategies to improve adolescent girl's environment and psychological health.

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## **APPENDICES**

**APPENDIX A**  
**MOTHER DAUGHTER SYNCHRONY SCALE**

**UNIVERSITY OF TENNESSEE**                      **COLLEGE OF EDUCATION**  
**Development of a Scale Measuring Synchrony Between Mothers and**  
**Adolescent Daughters and Its Relationship to Self-Esteem and Achievement**  
**INFORMED CONSENT STATEMENT**

Investigator: Pamela Hilemon Gross, Doctoral Student, University of Tennessee,  
Psychoeducational Studies Unit 974-8145 .

This research is being done for Doctoral dissertation.

- I understand the general purpose of this study is to see if the relationship between mothers and teenage daughters has anything to do with how the girl thinks about herself (self-esteem) and her grades in school.
- I understand the concept of synchrony is being used in this study to describe a natural relationship between a mother and daughter. Synchrony is the harmonious connection and exchanged support which links two separate people. The questionnaire "Mother Daughter Synchrony Scale" was designed to measure synchrony between a mother and daughter.
- I understand I will be asked to complete the "Mother Daughter Synchrony Scale" and also the "Behavior Assessment System for Children Self Report" if I am a teenage daughter or the "Behavior Assessment System for Children Parent Report" if I am the mother of a teenage daughter. This should take about 3/4 hour .
- I understand that by completing the attached questionnaire I will be giving my consent to participate in this research.
- I understand that I will be asked to give my daughter's grade point average.
- I understand that I will be asked to report my grade point average (if I am the daughter).
- I understand that there are no anticipated risks to me as a participant of this study.
- I understand the questionnaires should be completed silently.
- I understand the benefit of filling out this questionnaire will be to think about and try to make my mother-daughter relationship better.
- I understand this research could benefit many teenage girls who are at high risk for emotional and health related problems. Also the results of this research could give mothers help in guiding and caring for their daughters.
- I understand no names will be used so my privacy will be protected. Only Ms. Gross and her faculty advisor will have access to the questionnaires. The dissertation will not contain any names or ways of identifying people.
- I understand the consent statements will be kept for three years in room 433 Claxton Addition Bldg., University of Tennessee, Knoxville.
- I understand participation in this study is voluntary and I can withdraw at any time without penalty.
- I understand that if I do not understand any part of this statement Ms. Gross is willing to answer any questions. I should not participate until I do understand. I will get a copy of this Informed Consent Statement.

## Mother-Daughter Synchrony Scale Mother's Form

Date of Birth \_\_\_\_\_

My Age \_\_\_\_\_

My Highest Years of Education: (circle) 8 12 16 16+

Daughter lives with: (circle) both biological parents

My Daughter's Grade Point Average: (circle closest value)

4.0 = A 3.5 = B+ 3.0 = B 2.5 = C+ 2.0 = C 1.5 = D+ 1.0 = D 0 = F

biological mother only

biological mother and step father

biological father and step mother

step mother only

Race: (circle) African American/Black Caucasian/White Other

other \_\_\_\_\_

### Directions and Scales

The following items describe the mother-daughter relationship. Please rate the following statements according to how well they apply to your relationship and to your daughter. Circle one response for each question. There are no right or wrong answers, so be sure you are honest with yourself as you rate each statement. Do not discuss your responses. Each statement should be rated as:

|                                                                                    | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|------------------------------------------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                                                    | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 1. My daughter attempts to control my life                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 2. My daughter talks to me about her friends                                       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 3. My daughter really listens when I talk to her                                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 4. My daughter is the dumbest person I know                                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 5. I enjoy spending time with my daughter                                          | SD                   | D        | SD/SA                                                  | A     | SA                |
| 6. My daughter shares her experiences with me                                      | SD                   | D        | SD/SA                                                  | A     | SA                |
| 7. My daughter says bad things about me                                            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 8. My daughter is unfair                                                           | SD                   | D        | SD/SA                                                  | A     | SA                |
| 9. My daughter shares her opinions with me                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 10. My daughter always makes time to listen to me                                  | SD                   | D        | SD/SA                                                  | A     | SA                |
| 11. My daughter never gets mad at me                                               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 12. I value the opinions and ideas of my daughter                                  | SD                   | D        | SD/SA                                                  | A     | SA                |
| 13. My daughter shares her spiritual views                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 14. My daughter always listens until I've finished talking                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 15. My daughter tells me about positive and negative aspects of her work or school | SD                   | D        | SD/SA                                                  | A     | SA                |

|                                                                      | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|----------------------------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                                      | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 16. My daughter interrupts me when I talk to her                     | SD                   | D        | SD/SA                                                  | A     | SA                |
| 17. My daughter is no good                                           | SD                   | D        | SD/SA                                                  | A     | SA                |
| 18. I like being in the car with my daughter                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 19. My daughter tells me about the activities of she and her friends | SD                   | D        | SD/SA                                                  | A     | SA                |
| 20. My daughter asks me about my day                                 | SD                   | D        | SD/SA                                                  | A     | SA                |
| 21. My daughter worries about me too much                            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 22. I consider my daughter my best friend                            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 23. My daughter isn't interested in what I have to say               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 24. My daughter is the smartest person I know                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 25. My daughter and I argue about everything                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 26. My daughter values me                                            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 27. My daughter pouts too much                                       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 28. My daughter relies on me                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 29. My daughter asks for my opinion about her grooming               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 30. My daughter is the meanest person I know                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 31. My daughter and I have a healthy relationship                    | SD                   | D        | SD/SA                                                  | A     | SA                |
| 32. If I was worried about a friend, I would talk to my daughter     | SD                   | D        | SD/SA                                                  | A     | SA                |
| 33. My daughter says inappropriate things                            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 34. My daughter expects too much from me                             | SD                   | D        | SD/SA                                                  | A     | SA                |

|                                                             | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|-------------------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                             | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 35. My daughter introduces me to her friends                | SD                   | D        | SD/SA                                                  | A     | SA                |
| 36. My daughter thinks she is always right                  | SD                   | D        | SD/SA                                                  | A     | SA                |
| 37. My daughter is the most attractive person I know        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 38. I can be myself with my daughter                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 39. My daughter tells me when she's happy                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 40. My daughter helps me when I ask                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 41. My daughter throws tantrums                             | SD                   | D        | SD/SA                                                  | A     | SA                |
| 42. My daughter asks my advice                              | SD                   | D        | SD/SA                                                  | A     | SA                |
| 43. My daughter listens carefully to my problems            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 44. My daughter has cried every day for the last year       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 45. I enjoy giving and getting hugs from my daughter        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 46. My daughter tells me about work or school               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 47. My daughter criticizes me                               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 48. My daughter trusts me                                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 49. My daughter always includes me                          | SD                   | D        | SD/SA                                                  | A     | SA                |
| 50. My daughter never forgets things                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 51. My daughter loves me the way I am                       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 52. I respect my daughter                                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 53. My daughter encourages me                               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 54. My daughter thinks everything I say is good             | SD                   | D        | SD/SA                                                  | A     | SA                |
| 55. When I'm in a bad mood my daughter helps me feel better | SD                   | D        | SD/SA                                                  | A     | SA                |

|                                                     | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|-----------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                     | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 56. I can tell my daughter my darkest secrets       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 57. My efforts never satisfy my daughter            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 58. I can be honest with my daughter                | SD                   | D        | SD/SA                                                  | A     | SA                |
| 59. My daughter is my friend                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 60. My daughter is too busy to listen to me         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 61. My daughter is the most obnoxious person I know | SD                   | D        | SD/SA                                                  | A     | SA                |
| 62. I can't be myself around my daughter            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 63. I feel very close to my daughter                | SD                   | D        | SD/SA                                                  | A     | SA                |
| 64. My daughter respects my time alone              | SD                   | D        | SD/SA                                                  | A     | SA                |



## Mother-Daughter Synchrony Scale Daughter's Form

Date of Birth \_\_\_\_\_

My Age \_\_\_\_\_

Mother's Highest Years of Education: (circle) 8 12 16 16+

I live with: (circle) both biological parents

My Grade Point Average: (circle closest value)

4.0 = A 3.5 = B+ 3.0 = B 2.5 = C+ 2.0 = C 1.5 = D+ 1.0 = D 0 = F

biological mother only

biological mother and step father

biological father and step mother

step mother only

Race: (circle) African American/Black Caucasian/White Other

other \_\_\_\_\_

### Directions and Scales

The following items describe the mother-daughter relationship. Please rate the following statements according to how well they apply to your relationship and to your mother. Circle one response for each question. There are no right or wrong answers, so be sure you are honest with yourself as you rate each statement. Do not discuss your responses. Each statement should be rated as:

|                                                                                  | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|----------------------------------------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                                                  | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 1. My mother attempts to control my life                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 2. My mother talks to me about her friends                                       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 3. My mother really listens when I talk to her                                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 4. My mother is the dumbest person I know                                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 5. I enjoy spending time with my mother                                          | SD                   | D        | SD/SA                                                  | A     | SA                |
| 6. My mother shares her experiences with me                                      | SD                   | D        | SD/SA                                                  | A     | SA                |
| 7. My mother says bad things about me                                            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 8. My mother is unfair                                                           | SD                   | D        | SD/SA                                                  | A     | SA                |
| 9. My mother shares her opinions with me                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 10. My mother always makes time to listen to me                                  | SD                   | D        | SD/SA                                                  | A     | SA                |
| 11. My mother never gets mad at me                                               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 12. I value the opinions and ideas of my mother                                  | SD                   | D        | SD/SA                                                  | A     | SA                |
| 13. My mother shares her spiritual views                                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 14. My mother always listens until I've finished talking                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 15. My mother tells me about positive and negative aspects of her work or school | SD                   | D        | SD/SA                                                  | A     | SA                |

|                                                                    | STRONGLY<br>DISAGREE<br>(SD) | DISAGREE<br>(D) | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE<br>(A) | STRONGLY<br>AGREE<br>(SA) |
|--------------------------------------------------------------------|------------------------------|-----------------|--------------------------------------------------------|--------------|---------------------------|
| 16. My mother interrupts me when I talk to her                     | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 17. My mother is no good                                           | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 18. I like being in the car with my mother                         | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 19. My mother tells me about the activities of she and her friends | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 20. My mother asks me about my day                                 | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 21. My mother worries about me too much                            | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 22. I consider my mother my best friend                            | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 23. My mother isn't interested in what I have to say               | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 24. My mother is the smartest person I know                        | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 25. My mother and I argue about everything                         | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 26. My mother values me                                            | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 27. My mother pouts too much                                       | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 28. My mother relies on me                                         | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 29. My mother asks for my opinion about her grooming               | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 30. My mother is the meanest person I know                         | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 31. My mother and I have a healthy relationship                    | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 32. If I was worried about a friend, I would talk to my mother     | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 33. My mother says inappropriate things                            | SD                           | D               | SD/SA                                                  | A            | SA                        |
| 34. My mother expects too much from me                             | SD                           | D               | SD/SA                                                  | A            | SA                        |

|                                                           | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|-----------------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                           | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 35. My mother introduces me to her friends                | SD                   | D        | SD/SA                                                  | A     | SA                |
| 36. My mother thinks she is always right                  | SD                   | D        | SD/SA                                                  | A     | SA                |
| 37. My mother is the most attractive person I know        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 38. I can be myself with my mother                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 39. My mother tells me when she's happy                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 40. My mother helps me when I ask                         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 41. My mother throws tantrums                             | SD                   | D        | SD/SA                                                  | A     | SA                |
| 42. My mother asks my advice                              | SD                   | D        | SD/SA                                                  | A     | SA                |
| 43. My mother listens carefully to my problems            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 44. My mother has cried every day for the last year       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 45. I enjoy giving and getting hugs from my mother        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 46. My mother tells me about work or school               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 47. My mother criticizes me                               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 48. My mother trusts me                                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 49. My mother always includes me                          | SD                   | D        | SD/SA                                                  | A     | SA                |
| 50. My mother never forgets things                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 51. My mother loves me the way I am                       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 52. I respect my mother                                   | SD                   | D        | SD/SA                                                  | A     | SA                |
| 53. My mother encourages me                               | SD                   | D        | SD/SA                                                  | A     | SA                |
| 54. My mother thinks everything I say is good             | SD                   | D        | SD/SA                                                  | A     | SA                |
| 55. When I'm in a bad mood my mother helps me feel better | SD                   | D        | SD/SA                                                  | A     | SA                |

|                                                   | STRONGLY<br>DISAGREE | DISAGREE | SOMETIMES<br>DISAGREE<br>SOMETIMES<br>AGREE<br>(SD/SA) | AGREE | STRONGLY<br>AGREE |
|---------------------------------------------------|----------------------|----------|--------------------------------------------------------|-------|-------------------|
|                                                   | (SD)                 | (D)      |                                                        | (A)   | (SA)              |
| 56. I can tell my mother my darkest secrets       | SD                   | D        | SD/SA                                                  | A     | SA                |
| 57. My efforts never satisfy my mother            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 58. I can be honest with my mother                | SD                   | D        | SD/SA                                                  | A     | SA                |
| 59. My mother is my friend                        | SD                   | D        | SD/SA                                                  | A     | SA                |
| 60. My mother is too busy to listen to me         | SD                   | D        | SD/SA                                                  | A     | SA                |
| 61. My mother is the most obnoxious person I know | SD                   | D        | SD/SA                                                  | A     | SA                |
| 62. I can't be myself around my mother            | SD                   | D        | SD/SA                                                  | A     | SA                |
| 63. I feel very close to my mother                | SD                   | D        | SD/SA                                                  | A     | SA                |
| 64. My mother respects my time alone              | SD                   | D        | SD/SA                                                  | A     | SA                |

**APPENDIX B**  
**TABLES**

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Table 1

Factor Loadings for the MDSS Items for Mothers and Daughters Combined

| ITEM NO. | SUPPORT | HARMONY | COMMUNICATION |
|----------|---------|---------|---------------|
| 10       | .79     | .12     | .18           |
| 43       | .73     | .17     | .17           |
| 3        | .72     | .19     | .20           |
| 14       | .71     | .22     | .10           |
| 23       | .69     | .20     | .21           |
| 49       | .68     | -.01    | .24           |
| 51       | .66     | .29     | .20           |
| 40       | .65     | .03     | .18           |
| 20       | .63     | -.18    | .31           |
| 60       | .60     | .16     | .18           |
| 47       | .57     | .26     | -.01          |
| 5        | .09     | .78     | .26           |
| 18       | .09     | .69     | .26           |
| 25       | .21     | .68     | .13           |
| 1        | .15     | .68     | .08           |
| 45       | -.00    | .66     | .22           |
| 52       | .23     | .65     | .24           |
| 8        | .20     | .65     | .12           |
| 58       | .26     | .65     | .20           |
| 31       | .44     | .64     | .31           |
| 21       | -.32    | .60     | -.12          |
| 38       | .33     | .51     | .22           |
| 46       | .20     | .27     | .75           |
| 2        | -.06    | .22     | .69           |
| 19       | .17     | .36     | .69           |
| 6        | .19     | .26     | .69           |
| 15       | .17     | .22     | .67           |
| 9        | .19     | .13     | .67           |
| 35       | .26     | .13     | .62           |
| 42       | .25     | .20     | .55           |
| 29       | .19     | -.11    | .51           |
| 39       | .33     | .30     | .48           |
| 13       | .18     | .33     | .46           |

Table 2.

Factor Loadings for the MDSS Items for Mothers

| ITEM NO. | COMMUNICATIONS | SUPPORT | HARMONY |
|----------|----------------|---------|---------|
| 46       | .77            | .20     | .25     |
| 6        | .76            | .20     | .20     |
| 15       | .73            | .15     | .15     |
| 9        | .72            | .19     | .25     |
| 2        | .71            | .16     | .22     |
| 19       | .69            | .33     | .28     |
| 35       | .62            | .24     | .15     |
| 42       | .54            | .43     | .15     |
| 29       | .50            | .17     | .03     |
| 13       | .50            | .16     | .35     |
| 39       | .39            | .27     | .39     |
| 14       | .18            | .69     | .11     |
| 40       | .07            | .65     | .13     |
| 10       | .36            | .65     | .09     |
| 3        | .29            | .63     | .23     |
| 47       | .15            | .56     | .14     |
| 49       | .38            | .53     | -.13    |
| 60       | .26            | .53     | .20     |
| 8        | .04            | .53     | .40     |
| 23       | .31            | .52     | .34     |
| 43       | .33            | .48     | .06     |
| 20       | .37            | .47     | .11     |
| 1        | .09            | .47     | .25     |
| 52       | .20            | .21     | .72     |
| 5        | .25            | .18     | .70     |
| 58       | .20            | .22     | .64     |
| 45       | .11            | -.04    | .63     |
| 38       | .26            | .13     | .61     |
| 18       | .25            | .18     | .59     |
| 51       | .20            | .47     | .51     |
| 25       | .08            | .40     | .50     |
| 31       | .37            | .48     | .50     |
| 21       | -.16           | -.34    | .34     |

Table 3

Factor Loadings for the MDSS Items for Daughters

| ITEM NO. | SUPPORT | HARMONY | COMMUNICATION |
|----------|---------|---------|---------------|
| 10       | .80     | .25     | .13           |
| 23       | .74     | .26     | .14           |
| 60       | .74     | .08     | .10           |
| 43       | .69     | .46     | .17           |
| 3        | .67     | .34     | .18           |
| 14       | .65     | .38     | .08           |
| 20       | .65     | -.10    | .33           |
| 51       | .55     | .47     | .24           |
| 40       | .54     | .23     | .33           |
| 49       | .54     | .35     | .29           |
| 1        | .19     | .71     | .07           |
| 21       | -.26    | .66     | -.13          |
| 5        | .26     | .66     | .29           |
| 25       | .29     | .63     | .16           |
| 31       | .50     | .62     | .30           |
| 8        | .28     | .60     | .12           |
| 18       | .23     | .60     | .25           |
| 52       | .29     | .58     | .31           |
| 58       | .36     | .56     | .22           |
| 47       | .43     | .46     | -.08          |
| 38       | .41     | .46     | .22           |
| 45       | .24     | .45     | .34           |
| 46       | .28     | .17     | .73           |
| 19       | .20     | .24     | .68           |
| 2        | -.04    | .03     | .65           |
| 15       | .22     | .19     | .64           |
| 9        | .04     | .19     | .62           |
| 6        | .23     | .23     | .62           |
| 35       | .26     | -.03    | .61           |
| 29       | .05     | -.02    | .56           |
| 42       | .12     | .21     | .55           |
| 39       | .46     | .13     | .54           |
| 13       | .09     | .41     | .45           |

Table 4

Means, Standard Deviations and Paired t-tests of Differences for Mothers and for Daughters on the MDSS subscales

|           | Support |      |         | Harmony |      |         | Communication |      |        |
|-----------|---------|------|---------|---------|------|---------|---------------|------|--------|
|           | M       | SD   | t       | M       | SD   | t       | M             | SD   | t      |
| Mothers   | 38.83   | 5.94 |         | 47.22   | 4.88 |         | 42.99         | 6.36 |        |
|           |         |      | -8.13** |         |      | 13.81** |               |      | 3.20** |
| Daughters | 43.18   | 7.56 |         | 40.59   | 7.22 |         | 41.35         | 6.54 |        |

Note. Eleven items per subscale.

N =212.

\*\*p < .01, two-tailed.

Table 5

Item-subscale correlation for Mothers

| Harmony  |             | Communications |             | Support  |             |
|----------|-------------|----------------|-------------|----------|-------------|
| Item no. | Correlation | Item no.       | Correlation | Item no. | Correlation |
| 1        | .40         | 2              | .68         | 3        | .66         |
| 5        | .64         | 6              | .75         | 10       | .68         |
| 8        | .48         | 9              | .72         | 14       | .61         |
| 18       | .55         | 13             | .54         | 20       | .52         |
| 21       | .02         | 15             | .66         | 23       | .62         |
| 25       | .53         | 19             | .77         | 40       | .53         |
| 31       | .63         | 29             | .44         | 43       | .49         |
| 38       | .53         | 35             | .60         | 47       | .50         |
| 45       | .43         | 39             | .51         | 49       | .52         |
| 52       | .67         | 42             | .61         | 51       | .56         |
| 58       | .58         | 46             | .77         | 60       | .56         |

Table 6

Item-subscale correlation for Daughters

| Harmony  |             | Communications |             | Support  |             |
|----------|-------------|----------------|-------------|----------|-------------|
| Item no. | Correlation | Item no.       | Correlation | Item no. | Correlation |
| 1        | .62         | 2              | .51         | 3        | .73         |
| 5        | .71         | 6              | .61         | 10       | .79         |
| 8        | .58         | 9              | .54         | 14       | .72         |
| 18       | .62         | 13             | .46         | 20       | .50         |
| 21       | .30         | 15             | .62         | 23       | .72         |
| 25       | .64         | 19             | .68         | 40       | .59         |
| 31       | .78         | 29             | .40         | 43       | .79         |
| 38       | .55         | 35             | .54         | 47       | .50         |
| 45       | .54         | 39             | .57         | 49       | .64         |
| 52       | .65         | 42             | .51         | 51       | .69         |
| 58       | .64         | 46             | .73         | 60       | .62         |

Table 7

Intercorrelations Between Subscales for Mothers and Daughters

| Subscales           | Support | Harmony | Communications |
|---------------------|---------|---------|----------------|
| Mothers (n = 212)   |         |         |                |
| 1. Support          | --      | .60     | .70            |
| 2. Harmony          |         | --      | .60            |
| 3. Communications   |         |         | --             |
| Daughters (n = 212) |         |         |                |
| 1. Support          | --      | .71     | .55            |
| 2. Harmony          |         | --      | .55            |
| 3. Communications   |         |         | --             |

Note. Correlations were moderately high between subscales using raw scores. Correlations determined using factor scores from an oblique rotation yielded lower intercorrelations. These correlations are found in Table 10.

Table 8

Means and Standard Deviation for Daughter's Synchrony and Self-Esteem  
Scores and Grade Point Average (GPA)

|             | Mean   | Standard Deviation | N   |
|-------------|--------|--------------------|-----|
| Synchrony   | 125.12 | 18.32              | 212 |
| Self-esteem | 50.60  | 9.03               | 100 |
| GPA         | 3.29   | .66                | 180 |

Table 9.

Intercorrelations between Self-Esteem, GPA, Subscales and Total Synchrony

| Subscales         | 1 | 2   | 3     | 4     | 5     | 6     |
|-------------------|---|-----|-------|-------|-------|-------|
| 1. Self-Esteem    | - | .16 | .23*  | .35** | .08   | .26** |
| 2. GPA            | - | -   | .20** | .33** | .24** | .30** |
| 3. Support        | - | -   | -     | .71** | .55** | .89** |
| 4. Harmony        | - | -   | -     | -     | .55** | .88** |
| 5. Communications | - | -   | -     | -     | -     | .80** |
| 6. Synchrony      | - | -   | -     | -     | -     | -     |

Note. N=100 for Self-Esteem; N=180 for GPA; N=212 for Support, Harmony, Communications and Synchrony.

\*  $p < .05$ . \*\*  $p < .01$

Table 10

Factor Structure and Factor Loadings for the MDSS for Daughters

| Support |     | Communication |     | Harmony |     |
|---------|-----|---------------|-----|---------|-----|
| 10      | .85 | 46            | .79 | 1       | .71 |
| 43      | .81 | 19            | .73 | 5       | .68 |
| 23      | .80 | 15            | .39 | 25      | .65 |
| 3       | .77 | 6             | .68 | 21      | .64 |
| 14      | .74 | 9             | .64 | 8       | .62 |
| 60      | .73 | 39            | .58 | 18      | .61 |
| 31      | .71 | 35            | .63 | 52      | .60 |
| 51      | .70 | 2             | .62 | 58      | .59 |
| 49      | .67 | 42            | .59 | 45      | .47 |
| 40      | .64 | 29            | .55 |         |     |
| 20      | .64 | 13            | .52 |         |     |
| 38      | .57 |               |     |         |     |
| 47      | .53 |               |     |         |     |

Note. Based on Oblimin factor analysis structure matrix.

Table 11

Intercorrelations Between Mother-Daughter Synchrony Scale Subscale  
for Mothers and Daughters

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|               | Mothers (n=212) |         |         |
|---------------|-----------------|---------|---------|
|               | Communication   | Harmony | Support |
| Communication | -               | .24     | .55     |
| Harmony       | -               | -       | .23     |
| Support       | -               | -       | -       |

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|               | Daughters (n=212) |               |         |
|---------------|-------------------|---------------|---------|
|               | Support           | Communication | Harmony |
| Support       | -                 | .42           | .36     |
| Communication | -                 |               | .22     |
| Harmony       |                   |               |         |

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Note. Based on Principal components analysis with an oblique rotation.

Table 12

Summary of Hierarchical Regression Analysis for Communication, Harmony and Support Predicting Self-Esteem  
(N= 100)

| Variable      | B     | $\beta$ |
|---------------|-------|---------|
| Harmony       | 2.77  | .33*    |
| Support       | 1.99  | .23     |
| Communication | -1.87 | -.20    |

Note.  $R^2 = .15$

\*  $p < .05$ .

Table 13\

Summary of Hierarchical Regression Analysis for Self-Esteem.

Communication, Harmony and Support Predicting Grade Point Average

(N= 100)

| Variable      | B    | $\beta$ |
|---------------|------|---------|
| Step 1        |      |         |
| Self-Esteem   | .03  | .16     |
| Step 2        |      |         |
| Self-Esteem   | .01  | .07     |
| Communication | .43  | .28*    |
| Harmony       | .37  | .26*    |
| Support       | -.07 | -.05*   |

Note.  $R^2 = .02$  for Step 1;  $R^2 = .20$ ,  $\Delta R^2 = .17$  for Step 2.

\*  $p < .05$ .

## **VITA**

Pamela Hilemon Gross was born in Oak Ridge, Tennessee on June 14, 1950. She attended schools in Anderson County and Roane County, Tennessee and graduated from Oliver Springs High School in 1968. She attended Tennessee Technological University for one year and then transferred to the University of Tennessee, Knoxville where in August, 1972 she received the Bachelor of Science in Education and teaching certification. After teaching in Tennessee public and private schools from 1972 to 1979, she resigned to be with her two young daughters. In September, 1983 she entered the Master's program in Educational Psychology at the University of Tennessee, Knoxville and officially received the Master's degree in December, 1985. In 1986 she worked as Marketing Manager for the Tanasi Girl Scout Council in Knoxville, Tennessee. She then held the position of Associate Director for Public Relations at East Tennessee Children's Hospital, Knoxville, Tennessee from 1987 until 1989. In September of 1989 she returned to The University of Tennessee to pursue the Doctorate of Philosophy Degree majoring in Education and specializing in School Psychology. She completed an internship with the Tennessee Internship Consortium in Professional Psychology serving Knox County Public Schools and The University of Tennessee Developmental and Genetics Center from 1993 to 1994. The Doctor of Philosophy degree was received May, 1997. She is presently working as a School Psychologist on a contractual basis to the Oak Ridge Public School System and licensed by the State of Tennessee.