MODERATING THE EFFECTS OF PARENTING STRESS ON
MARITAL SATISFACTION IN PARENTS OF CHILDREN WITH INTELLECTUAL
DISABILITY

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Parents of children with disabilities tend to experience greater marital distress than parents of typically developing children. However this result is small overall and couples vary greatly. The present study sought to determine whether certain resiliency factors might moderate the impact of parenting stress on marital adjustment in parents of children with intellectual disability. Two factors that were investigated were the parenting alliance and marital problem solving. It was hypothesized that one or both of these factors might interact with parenting stress to predict marital satisfaction, such that parents who score high on these factors might be less negatively impacted by parenting stress. Results indicated that the parenting alliance was a significant predictor of marital satisfaction, but did not interact with parenting stress. Marital problem solving interacted with parenting stress, but rather than buffering high stress, was an asset at low stress, and its benefits were nullified at high stress.
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LIST OF ABBREVIATIONS

DAS = Dyadic Adjustment Scale
QRS1 = Questionnaire on Resources and Stress, Parent and Family Problems subscale
QRS2 = Questionnaire on Resources and Stress, Pessimism subscale
PA = Parenting Alliance General subscale of the Family Experiences Questionnaire
MCST = Mean score for the Communication Skills Test
rfPOS = rate of frequency of positive tactics used in the Communication Skills Test,
rfNEG = rate of frequency of negative tactics used in the Communication Skills Test
INTRODUCTION

Disability and marriage

Parents of children with developmental disabilities (DD), including intellectual disability (ID), are at elevated risk for marital distress and dysfunction compared to parents of typically developing children, as indicated by self-report measures of marital satisfaction (Bristol, Gallagher, & Schopler, 1988; Friedrich & Friedrich, 1981), as well as observed marital interactions (Floyd & Zmich, 1991). Parents of children with DD may also be at greater risk for divorce (Hartley et al., 2010; Hodapp & Krasner, 1994). For example, Hartley et al., (2010) compared divorce rates in parents of neurotypical children and parents of children with autism spectrum disorder (ASD), and found not only that the rate of divorce was higher overall in the ASD group, but also that the risk for divorce that is typically highest in the earlier years of marriage was protracted for these couples. That is, whereas the divorce rates in the control group decreased sharply after the target child reached approximately eight years of age, the divorce rate in the ASD group remained high throughout the target child’s life, into young adulthood. Risdal and Singer (2004) conducted a meta-analysis of 13 studies (published between 1975 and 2003) measuring marital satisfaction and divorce rates in parents of children with and without disabilities. Although there was variability across individual studies, there was an overall negative effect of having a child with a disability on marital quality, albeit a small effect (d = 0.21).

The negative impact of having a child with a disability on marital quality is commonly accounted for by high levels of parenting stress. Parents of children with DD experience more parenting stress than parents of neurotypical children (Baker & McIntyre, 2003; Blacher, Neece, & Paczkowski, 2005; Ingersoll & Hambrick, 2011; Norlin & Broberg, 2013). Furthermore, Gerstein, Crnic, Blacher, and Baker (2009) found a significant negative correlation between parenting stress and marital satisfaction for both mothers and fathers of children with intellectual disability. Similarly, Mullen (1997) found a significant negative correlation between parenting stress and marital satisfaction in parents of children with cerebral palsy, and Quittner et al. (1998) found that in parents of children with cystic fibrosis, “role strain” was a negative predictor of marital satisfaction. Additionally, some studies have found a significant negative correlation between marital satisfaction and child behavior problems, presumably a source of
parenting stress, in families of children with developmental disabilities, as well as in families of children without disabilities (Floyd & Zmich, 1991; Ingersoll & Hambrick, 2011; Pollman, Finkenauer, & Begeer, 2010). These findings suggest that the added stressors associated with having a child with a developmental disability, such as excessive behavior problems and increased parenting demands (i.e. role strain), contribute significantly to marital distress in parents of children with developmental disabilities.

However, not all parents of children with disabilities have poor marital outcomes. Although Risdal and Singer’s (2004) meta-analysis revealed an overall adverse effect of having a child with a developmental disability on marital quality across studies, some of the studies included in their analyses showed equal or even better marital adjustment in a disability sample than in a comparison sample. More recently, Daire, Munion, and Carlson (2011) compared the marital satisfaction of parents of children with and without special needs and found no significant differences. One qualitative study concluded that having a child with a disability enhanced family and marital closeness (Stainton & Besser, 1998), and another qualitative study reported that parents of children with ASD showed an initial increase in marital strain, followed by improved marital closeness (Hock, Timm, & Ramisch, 2012), suggesting different effects on the marriage at different time points in the child’s development. Floyd and Zmich, (1991) found no significant difference in self-reported marital satisfaction between parents of children with and without disabilities, but did find a difference in the quality of observed behavioral interactions between spouses. Specifically, they found that parents of children with ID demonstrated more negative and counterproductive communication tactics, which have been shown to predict later marital distress, suggesting these couples may be more at risk for developing marital problems despite not perceiving current marital distress. Importantly, Wieland and Baker (2010) found that parents of children with ID and parents of neurotypical children did not show significant differences in mean marital satisfaction levels, but the ID group showed significantly more variance in marital satisfaction ratings than the control group. This finding suggests that parents of children with disabilities can have greatly varied marital experiences, which might explain the variability seen across previous studies.

Although there is strong evidence that parenting stress associated with parenting a child with a developmental disability increases the risk for marital distress, less research has investigated factors that may contribute to resilience in couples who have a child with a
disability. Gardiner and Iarocci (2012) argued that although many studies of families of children with disabilities focus only on negative outcomes, referred to as the “deficit view,” many families may in fact be resilient to, or even made stronger by, the process of coping with this atypical parenting experience (e.g. Stainton & Besser, 1998). In light of the great variability found across families affected by a disability, in addition to understanding the particular risk factors that contribute to a worsening of the marital relationship (e.g. parenting stress), it is also vital to understand what factors may protect, or even benefit a couple faced with caring for a child with special needs.

Resilience has been described by Matsen (2001) as a “phenomen[on] characterized by good outcomes in spite of serious threats to adaptation or development” (p. 228). Masten asserts that resilience requires (1) some threat to adaptation or development, and (2) some asset that results in positive or adequate adaptation or development in the face of the given threat. Resilience factors have also been conceptualized as factors that “moderate stress reactivity and mediate stress recovery” (Ong, Bergeman, Bisconti, & Wallace, 2006, p. 730). The conceptualization of resilience as moderating response to stress is the focus of the present study, which examines the impact of parenting stress on marital satisfaction and potential protective factors. Masten describes the moderation model of resilience, in which individuals who are relatively high on an asset (resilience factor) are relatively less adversely impacted by adversity (stress) than those who are lower on the resilience factor. Thus, the resiliency factors in the present study will be investigated using a moderation model. Two potential resiliency factors that will be considered in the present study are the parenting alliance and marital problem solving.

**Parenting Alliance**

The parenting alliance was first described by Cohen and Weissman (1984) as the extent to which parents “acknowledge, respect, and value the parenting roles and tasks of the partner,” (p. 35). This construct is a considered to be a component of the marital relationship that relates specifically to how two people work together to raise a child (Cohen & Weissman, 1984; Gable, Crnic, & Belsky, 1994; Weissman & Cohen, 1985). Cohen and Weissman (1984, 1985) further describe the parenting alliance as a component of the marital relationship that can impact the individual parent’s sense of well-being, and also influence how the parent copes with stressors such as family changes and instability. Some examples they describe include divorce, illness, or
death in the family. This reasoning can be applied as well to the circumstance of raising a child who has a developmental disability. The experience of raising a child with a disability includes receiving the diagnosis, which can be traumatic for some parents, as well as coming to terms with what the disability means for the child’s and the parents’ futures, and facing new demands and complications that arise throughout the child’s life because of this disability.

Several studies support the assertion that a strong parenting alliance can help parents cope with stressors in family life. Researchers have found that a strong parenting alliance helps to alleviate parenting stress in both mothers and fathers of children with chronic illnesses (Frank et al., 1991). Abidin and Brunner (1995) also found a negative correlation between the parenting alliance and scores on the Parenting Stress Index in a community sample of parents. Similarly, Hill-Chapman, Herzog, and Maduro (2013) found that for parents of children with ASD exhibiting high numbers of atypical behaviors, a strong parenting alliance was associated with low parenting stress. Similarly, Norlin and Broberg (2013) found that the quality of the coparenting relationship (i.e., the parenting alliance) predicted future parental well-being, as measured by a modified version of the Beck Depression Inventory. Although this study did not examine moderating effects, the authors proposed that, “…a good couple relationship [might] buffer… the potential negative impact of high parenting stress experienced by some parents of children with ID” (p. 564).

In addition to helping parents cope with stress, the quality of the parenting alliance has been shown to correlate positively with marital satisfaction, though the causal direction of this relationship has not been consistently interpreted. Some studies have concluded that marital satisfaction significantly predicts the quality of the coparenting relationship, i.e. the parenting alliance (e.g. Margolin, Gordis, & John, 2001), while others have concluded that the parenting alliance predicts marital satisfaction (e.g. Morrill, Hines, Mahmood, & Cordova, 2010). Some have used structural equation modeling to bring clarity to this association. Floyd, Gilliom, and Costigan, (1998), as well as Pedro, Ribeiro, and Shelton (2012) and Holland and McElwain (2013) tested a number of competing causal models, and their results favored a causal model in which marital satisfaction predicted the parenting alliance, which in turn predicted parenting experiences. However, none ruled out the possibility of the parenting alliance predicting marital adjustment. Similarly, Morrill, Hines, Mahmood, and Cordova (2010) tested two different path models using structural equation modeling: (1) marital satisfaction predicting parenting alliance
which in turn predicts parenting practices, and (2) parenting alliance simultaneously predicting marital satisfaction and parenting practices. Although they found support for the former, traditional model, they found that the causal model in which the quality of the coparenting relationship significantly predicted “marital health” fit equally well, suggesting a bi-directional association between the parenting alliance and the marital relationship. Additionally, Schoppe-Sullivan et al. (2004) observationally coded coparenting behavior and marital behavior at multiple time points, and found that coparenting behavior (supportive vs. undermining) when the child was six months of age predicted the quality of marital interactions when the child was three years of age, but early marital satisfaction did not predict later coparenting behavior. Moreover, Petch, Halford, Creedy, and Gamble (2012) found that parents enrolled in a coparenting program, designed to teach positive coparenting practices and improve the coparenting relationship, had both better marital satisfaction and less parenting stress than parents who were enrolled in a basic parenting class that did not target coparenting. Their results suggest that improving the coparenting relationship can both reduce parenting stress and improve marital satisfaction, consistent with the parenting alliance as a predictor of marital quality.

Given that the parenting alliance was conceptualized as a resource that helps parents cope with family-related stressors (Cohen & Wessman, 1984), it is plausible that the parenting alliance may moderate the impact of child-related stress on the quality of the marriage, allowing a couple to maintain or even strengthen their marriage in the face of high stress brought on by raising a child with special needs. Whereas many studies have investigated the parenting alliance as a mediator between parenting experiences (how the parent feels about and interacts with their child) and marital adjustment, few have investigated how the parenting alliance might moderate this association. It must be noted that one recent study asked whether the parenting alliance mediates or moderates the relationship between parenting stress and marital satisfaction in a community sample in Italy (Camisasca, Miragoli, & Di Blasio, 2014). However, in contrast to the present study, which is concerned with whether the parenting alliance moderates the impact of parenting stress on marital satisfaction, Camisasca and colleagues posed a statistically different question. The researchers used marital satisfaction as a predictor of parenting stress, and found that the parenting alliance mediated rather than moderated that association. However they did not test a model in which parenting stress predicted marital satisfaction, and thus did not test whether the interaction between parenting stress and parenting alliance significantly
predicted marital satisfaction. There seems to be sufficient evidence, particularly within the
disability literature, that parenting stress predicts marital satisfaction, which may account for
differences in marital distress between parents of children with and without disabilities.
Therefore, it is worth re-examining this question with parenting stress as a predictor for marital
satisfaction within a disability sample, in order to determine if the parenting alliance may act as a
protective factor for parents of children with disabilities.

**Problem Solving**

Another important resource for couples with children who have a disability is their
demonstrated that the quality of marital interactions during a problem solving discussion
significantly predicted marital distress five years later. The quality of marital problem solving
interactions has been defined by a couple’s ability to stay on task, propose solutions to the
problem at hand, and validate one another’s thoughts and feelings, while avoiding behaviors
such as commanding, criticizing, and blaming (Floyd & Markman, 1984; Floyd, O’Farrell, &
Goldberg, 1987). Gottman and Notarius (2000) conducted a decade review of the literature on
observed marital interaction, and concluded that, in concordance with Markman (1981), marital
distress, marital violence, and divorce can be predicted both concurrently and longitudinally by
the quality of marital problem solving interactions. This review also described how marital
conflict and negative interactions between parents can predict child internalizing and
externalizing symptoms. Therefore, the problem solving skills of parents of children with
disabilities may be particularly important for marital and overall family adjustment.

It has been further proposed that improving problem solving skills may prevent future
distress. Markman, Floyd, Stanley, and Storaasli, (1988) tested the efficacy of a prevention-
based intervention for premarital couples. Couples planning marriage were recruited from the
general population (i.e. non-clinical), and randomly assigned to intervention, or no-intervention
control. They completed a five-session training program that focused on developing positive
communication and problem solving skills. Results indicated that significantly more couples in
the control group were divorced or separated by the three-year follow up. Similarly, the groups
differed significantly on marital satisfaction at three-year follow up, despite using pre-separation
marital satisfaction scores for separated/divorced couples, which the authors assert results in a
more conservative estimate of group differences. Markman, Renick, Floyd, Stanley, and Clements, (1993) extended these results using a larger sample and following up at four and five years. This study showed a similar pattern of results through four year follow up, with some results trending at five years post intervention. Hahlweg, Markman, Thurmaier, Engl, and Eckert (1998) replicated Markman’s et al. (1988) study in a German sample. These findings support the notion that the quality of problem solving interactions between married persons can have a major impact on their marital satisfaction. In other words, early marital problem solving skill likely has an impact on later marital satisfaction, preventing marital distress by allowing couples to cope more effectively with life stressors that generally lead to marital distress and divorce. Thus, in this preventive framework, problem solving moderates the effects of stress on couples’ marital satisfaction.

Longitudinal studies of couples’ relationships provide further support for the theory that marital problem solving behavior moderates the association between stress and marital adjustment. Cohan and Bradbury (1997) followed a group of newlyweds over eighteen months with the aim of investigating the mediating and moderating effects of marital problem solving. They found that problem solving behavior moderated (but did not mediate) the influence of negative life events on subsequent individual and marital adjustment. Couples with more adaptive problem solving skills maintained their level of adjustment, or may have even benefited from stressful life events, while couples with maladaptive marital problem solving behaviors suffered poor adjustment after stressful life events. Neff and Broady (2011) also found that problem solving moderated the association between life stress and marital satisfaction. This study followed newlyweds over two and a half years, and also followed a separate sample of couples transitioning into parenthood over four years. In both groups, couples were assessed at six-month intervals on self-reported marital satisfaction, self-reported stress in 11 major domains of life (excluding the marital domain), and observationally coded problem solving. In both groups, significant interactions revealed that for couples who had strong problem solving abilities at time-point 1, those reporting higher levels of stress at later time points reported better marital adjustment than those with lower levels of stress or poor initial problem solving skill. Neff and Broady (2011) interpreted this pattern to mean that for those who have good problem solving abilities, being faced with stressors and using the opportunity to practice these skills can later benefit the marriage. Thus, in this study, effective problem solving actually reversed the
negative effect of stress on marital satisfaction and allowed for greater resilience. These findings raise the possibility that parents with strong marital problem solving skills may, when faced with the heightened stress of raising a child with a disability, remain resilient to, or even benefit from, that experience.

**Present study**

The present study examined the association between parenting stress and marital satisfaction in parents of children with intellectual disability, as well as the moderating effects that the parenting alliance and problem solving abilities may have on the association between parenting stress and marital satisfaction. It was hypothesized that parents who have a strong parenting alliance and positive problem solving skills have a marriage that is more resilient to parenting stress associated with having a child with an intellectual disability, and thus show a less negative association between parenting stress and marital satisfaction than parents who have a poor alliance and ineffective problem solving skills. Statistically, it was expected that either the parenting alliance, the quality of marital problem solving, or both will interact significantly with parenting stress in predicting marital satisfaction in parents of children with intellectual disability. Thus, three specific hypotheses were tested: (1) Parenting stress significantly predicts marital satisfaction in parents of children with intellectual disability, (2) the parenting alliance moderates the association between parenting stress and marital satisfaction (weakening or reversing the negative association), and (3) marital problem solving ability moderates the association between parenting stress and marital satisfaction (weakening or reversing the negative association).
METHOD

The present study used data collected from a longitudinal study that tracked families of children with intellectual disability (ID) over a span of 14 years. Four data points were collected for this longitudinal study. For the present analyses, we used data from the first time-point, which occurred when the target child (i.e. the child with ID) was between 6 and 18 years of age.

Participants

Participants were recruited for this study through public school systems, community groups, and agencies serving children with special needs. Upon entering the study, families had a child between 6 and 18 years of age who had an intellectual disability. A total of 114 two-parent families with children with ID completed all self-report measures, as well as the problem solving task at this time-point. All couples completing the assessment measures were married or cohabitating.

For each child with ID, standardized intellectual and adaptive functioning tests had been completed in the school setting within three years of entrance into the study. The test results and Individualized Educational Plan (IEP) records were obtained from the schools, with parent’s permission, to confirm the child’s intellectual and adaptive functioning level and disability status. Children were classified as having either mild ID (IQ of 55-70) or moderate ID (IQ of 40-55), and all children had deficits in at least two areas of adaptive functioning. Of the target children, 55 were male and 59 were female. Demographic data from participants can be found in Table 1.

Measures

Parenting Stress.

Both parents completed a version of the Questionnaire on Resources and Stress (QRS; Holroyd, 1987) to assess childcare-related stress. The instrument was specifically designed for use in families of children with disabilities to assess the unique stresses associated with having a child with a disability. A short form has also been established, which is highly correlated with the longer form ($r = .99$), and contains 52 items loading onto four subscales: Parent and Family Problems, Pessimism, Child Characteristics, and Physical Incapacitation (Friedrich, Greenberg,
& Crnic, 1983). Internal consistency of these subscales ranges from .70 to .80 for mothers and fathers (Richardson, 2012), and correlations with other measures of parenting stress provide evidence of convergent validity of this measure (Honey, Hastings, & McConachie, 2005). As in Richardson (2012) and Floyd and Gallagher (1997), for the purpose of this investigation, the two subscales (or factors) that most closely assess child-related stress for parents of children with ID, Parent and Family Problems (Factor 1) and Pessimism (Factor 2), will be used (see Appendix A).

Marital Quality.

Both parents completed the Dyadic Adjustment Scale (DAS; Spanier, 1976) to assess marital quality and satisfaction. A factor analysis of this instrument revealed four subscales: Dyadic Satisfaction, Dyadic Cohesion, Dyadic Consensus, and Affectional Expression (Spanier, 1976). The DAS is widely used in marital research, and has demonstrated internal consistency coefficients (Cronbach’s alpha) above .70 on all of the subscales, and .96 for the Total Dyadic Adjustment Scale (Spanier, 1976). More recent research has demonstrated internal consistency scores ranging from .70 to .95 (Carey, Spector, Lantinga, & Krauss, 1993), and the DAS has been shown to differentiate distressed and non-distressed couples (Eddy, Heyman, & Weiss, 1991). The present study will use the total DAS score for the analyses (Appendix B).

Parenting Alliance.

The Family Experiences Questionnaire (FEQ; Frank, Jacobson, & Avery, 1988) was administered to assess each parent’s perception of their coparenting experience. The full version of this measure contains 133 items rated on 4-point Likert scale ranging from “strongly disagree” to “strongly agree,” which load onto 12 subscales dealing with the parenting alliance, parenting confidence, and parenting values and practices. The present study used General Alliance subscale (see Appendix C). The General Alliance subscale of the FEQ contains 32 items assessing aspects of coparenting such as feeling supported in the parenting role, mutual respect, satisfaction with shared parenting responsibilities, and agreement on child-related issues. Floyd, Gilliom, and Costigan (1998) found internal consistency for these subscales ranging from alpha of .95 to .96 depending on which parent was the respondent.
Marital Problem Solving.

All couples participated in a problem solving discussion task, which was coded using the Communication Skills Test (CST; Floyd & Markman, 1984; Floyd, 2004). This task is designed to assess a couple’s ability to productively talk through a disagreement or important issue in a positive manner, while avoiding counterproductive tactics such as blaming or insulting. Couples first individually reviewed a list of ten common relationship problems (e.g. finances, amount of time spent together, career decisions, etc.) and rated the importance of each issue in their relationship. After comparing ratings, they had to agree on the most important issue that they would then discuss. After agreeing on a topic, the experimenter instructed the couple to describe the problem from their own point of view, discuss the problem, and attempt to reach a mutually satisfying solution. The experimenter then left the room, and couples engaged in a 10 minute discussion together while being video recorded. The recording was then coded by trained coders to assess the quality of problem solving. Specifically, each statement by each participant was coded on a 5-point scale indicating the quality of the communication and problem-solving skill displayed: (1) very negative (e.g. avoidance/withdrawal, blaming, put-down), (2) negative (e.g. dogmatic opinion, leading question), (3) neutral (e.g. problem talk, information), (4) positive (e.g. feeling statement, compliment, humor), or (5) very positive (e.g. solution proposal, validation, summarizing). A complete list of statement types and corresponding codes can be found in Appendix D. An average score was calculated for the ten-minute conversation for each parent, individually, as well as each couple together. Average scores closer to 5 indicate more positive and productive problem solving tactics, while scores closer to 1 indicate more negative and unproductive styles of communicating while problem solving. Additionally, rates of frequency were calculated for positive and negative problem solving tactics. Rates were computed by adding the number of interactions coded as 1 or 2 (very negative or negative), and dividing by the total number of coded interactions, and separately adding the number of interactions coded as 4 or 5 (positive or very positive), and again dividing that number by the total number of coded interactions. Separately calculating rates of positive and negative tactics allow us to determine if the association between parenting stress and marital satisfaction might be differentially influenced by negative or positive problem solving behaviors.
Analyses

Data were analyzed using a set of hierarchical linear regressions to test the association between parenting stress and marital quality, and the moderating effects of the parenting alliance and problem solving ability. Continuous variables were centered and interaction terms were calculated for each predictor and each potential moderator (i.e. six interaction terms for each spouse). Dyadic adjustment was entered as the dependent variable in all regression analyses. In Block 1, Factors 1 and 2 the QRS (described above) were simultaneously entered as independent variables. Four moderators were tested: (1) Parenting Alliance General, (2) Mean CST score, (3) rate of frequency of positive interactions, (4) rate of frequency of negative interactions. For each regression, the mean centered moderator was entered simultaneously with the QRS Factors 1 and 2. In Block 2 of the linear regression, the interaction terms of each moderator with each factor of the QRS (e.g. QRS1 x Mean CST and QRS2 x Mean CST) were entered stepwise. All of these analyses were run separately for husbands and wives. Thus a total of eight regression analyses were conducted. The moderation model being tested can be found in Figure 1.
RESULTS

Descriptive Statistics

Means and standard deviations for the dependent and independent variables for husbands and wives are presented in Table 2. Most notably, the mean DAS scores were comparable to the married couples in Spanier’s original study (M = 114.8, SD = 17.8), and above the proposed cut-off score for marital distress of 100 (Margolin, Michelli, & Jacobson, 1988; Spanier, 1976). Thus this group of parents of children with disabilities reported fairly average marital adjustment.

Univariate Correlations

Bivariate correlations between all study variables for the husbands and wives can be found in Tables 3 and 4, respectively. Regarding the association between the two stress measures, the two subscales of the QRS correlated significantly, though mildly, with each other for both husbands (r = 0.55, p < 0.01) and wives (r = 0.36, p < 0.01). Regarding the associations among the measures of problem solving, the overall Mean CST scores tended to reflect the variance in both the positive and negative behaviors, and were correlated significantly with rate of positive and negative problem solving behaviors for both the husbands (POS: r = 0.85, p < 0.01; NEG: r = -0.69, p < 0.01) and the wives (POS: r = 0.85, p < 0.01; NEG: r = 0.69, p < 0.01). However, the associations between positives and negatives were modest for both husbands (r = -0.27, p < 0.01) and wives (r = -0.24, p < 0.01). The stress and alliance measures generally were not significantly correlated, though the Parent and Family Problems subscale of the QRS (QRS1) correlated significantly with the parenting alliance for wives (r = -0.19, p < 0.05), albeit a small effect.

Univariate associations with the outcome measure (marital adjustment) revealed some significant associations. For husbands, the DAS correlated negatively with the Pessimism subscale of the QRS (QRS2; r = -0.23, p < 0.05) and positively with the parenting alliance measure (r = 0.29, p < 0.01). For wives, the DAS correlated positively with the parenting alliance (r = 0.53, p < 0.01), positively with the mean CST score (r = 0.21, p < 0.05), and negatively with the rate of negative problem solving tactics (r = -0.33, p < 0.01). Contrary to what would be expected based on past research, neither measure of parenting stress correlated significantly with the DAS for wives (all p > 0.15).
Regression Analyses

In order to test the hypothesis that the parenting alliance, marital problem solving skills, or both, would moderate the association between parenting stress and marital satisfaction, a series of regression analyses was conducted with marital satisfaction as the dependent variable and the measures of parenting stress and the parenting alliance or problem solving skills as the predictors. In all analyses, both measures of parenting stress were entered as predictors, along with the proposed moderator (parenting alliance or marital problem solving), followed by the interaction term of that moderator with each measure of parenting stress. Thus four regression analyses were conducted for each spouse to test whether the parenting alliance ratings, mean CST score, rate of positive problem solving tactics, or rate of negative problem solving tactics, changed the strength or direction of the association between either measure of parenting stress and dyadic adjustment. For each regression analysis, all main effects were entered simultaneously in Block 1, and interaction terms were entered stepwise in Block 2. Thus if interactions did not add significant variance to the model, they were excluded. Interactions that were significant were included in model 2 (if applicable), and were probed to clarify the nature of the interaction. For significant interactions, data for plotting were calculated using the method described in Cohen, Cohen, West, and Aiken (2003).

Husbands

For the husbands, the regression analyses revealed a significant main effect of pessimism in predicting dyadic adjustment (DAS) in all models (p < 0.05) with higher self-reported pessimism (about the child’s and family’s future) predicting lower dyadic adjustment. There was also a significant main effect of parenting alliance (p < 0.01), with higher self-reported parenting alliance scores predicting higher self-reported dyadic adjustment scores. There was additionally a main effect of rate of positive problem solving behaviors (p <.05), with more frequent use of positive problem solving behaviors predicting greater dyadic adjustment.

A significant two-way interaction occurred only between the Parent and Family Problems factor of parenting stress and frequency of positive problem solving behaviors. The interaction term added significant predicted variance to the model (R² = 0.134, ΔR² = 0.05, F(1, 109) = 6.302, p <0.05). None of the other interactions added significantly to the model, and were thus
excluded. However, the interaction between Parent and Family Problems and the Mean CST score was a trend (p = 0.066). See Table 5 for regression results, including R² and F values for each predictor in each model.

The significant interaction between stress and positive problem solving is presented in Figure 2. The graph in figure 2 displays separate regression lines predicting dyadic adjustment from stress at low, medium, and high levels of positive problem solving behaviors, based on the mean and +1SD. As seen in Figure 2, those who displayed low rates of positive problem solving show a slightly positive association between stress and dyadic adjustment, although the association is not significant (t = 1.24, p = 0.22). Those with medium rates of positive problem solving behaviors show no association between parenting stress and dyadic adjustment (t = -0.84, p = 0.40), and those with high rates of positive problem solving behavior show a significant negative association between parenting stress and dyadic adjustment (t = -2.47, p < 0.05). This pattern is not consistent with the hypothesis, which predicted that positive problem solving would buffer the adverse effects of stress. Instead, the pattern of findings in Figure 2 indicated that only at lower rates of stress did those with more positive problem solving behavior have higher dyadic adjustment scores, while high parenting stress was associated with poor marital adjustment regardless of the quality of problem solving.

Wives.

For the wives, regression analyses revealed a main effect of parenting alliance (p < 0.001) with higher self-reported parenting alliance scores predicting higher self-reported dyadic adjustment scores. Analyses also revealed a main effect of mean CST score (p < 0.015) with higher scores on the Communication Skills Test predicting higher self-reported dyadic adjustment. There was additionally a main effect of the rate of negative problem solving behaviors (p < 0.001), with higher rates of negative problem solving behavior predicting lower self-reported dyadic adjustment.

A significant two-way interaction occurred between the Pessimism factor of parenting stress and the mean CST score (R² = 0.135, ΔR² = 0.057, F(1, 109) = 7.221, p < 0.01), as well as between Pessimism and the rate of positive problem solving behaviors (R² = 0.070, ΔR² = 0.036, F(1, 109) = 4.226, p < 0.05). No other significant interactions emerged. See Table 6 for regression results, including R² and F values for each predictor in each model.
The significant interactions for the wives are presented in Figures 3 and 4. The graph in Figure 3 displays the moderation effect of mean CST, with separate lines plotting predicted dyadic adjustment from Pessimism at low, medium, and high CST scores, based on the mean and \(+1\)SD. The graph in Figure 4 displays the moderation effect of positive problem solving behaviors, again, with each line plotting the predicted dyadic adjustment score from parenting stress at low, medium, and high rates of positive problem solving behavior, based on the mean and \(+1\)SD. As seen in Figure 3, the pattern is similar to the results for the husbands. Regarding overall CST scores as the moderator, the wives who had low CST scores show a slightly positive association between stress and dyadic adjustment, although the association is not significant (\(t = 0.62, p = 0.53\)). Those with medium rates of positive problem solving behaviors show a significant negative association between parenting stress and dyadic adjustment (\(t = -2.11, p < 0.05\)), and those with high rates of positive problem solving behavior also show a significant negative association between parenting stress and dyadic adjustment (\(t = -3.35, p < 0.01\)). When parenting stress is high, all groups rate their dyadic adjustment approximately the same, regardless of overall marital problem solving skills, while at lower rates of stress, those using relatively positive as opposed to negative strategies have higher dyadic adjustment scores. Regarding positive behaviors as the moderator, as seen in Figure 4, those who displayed low rates of positive problem solving show a slightly positive association between stress and dyadic adjustment, although the association is not significant (\(t = 0.38, p = 0.71\)). Those with medium rates of positive problem solving behaviors show a trend toward a negative association between parenting stress and dyadic adjustment (\(t = -1.86, p = 0.07\)), and those with high rates of positive problem solving behavior show a significant negative association between parenting stress and dyadic adjustment (\(t = -2.64, p < 0.01\)). Like the data from the husbands, these results are inconsistent with the hypothesis that problem solving would act as a protective factor against high parenting stress. For wives, as was the case for the husbands, at lower rates of stress, those with more positive problem solving behavior have higher dyadic adjustment scores, while at high levels of parenting stress, problem solving behavior exerts no benefit.
DISCUSSION

The current study investigated whether the parenting alliance or marital problem solving skill moderates the association between parenting stress and marital adjustment in parents of children with intellectual disability (ID). It was hypothesized that parents with lower self-rated parenting alliance, or more negative and fewer positive marital problem solving behaviors would be adversely affected by parenting stress and experience lower dyadic adjustment, while parents with higher self-reported parenting alliance, or more positive and fewer negative problem solving behaviors would have marriages that are less negatively impacted by, or perhaps even positively influenced by high parenting stress. Instead, the pattern of findings showed that, rather than buffering stress, the parenting alliance predicted marital satisfaction regardless of parenting stress. Specific aspects of marital problem solving were also main effects in predicting marital satisfaction for husbands and wives. Additionally, good problem solving ability moderated the association between parenting stress and marital satisfaction such that good problem solving was only beneficial for marital adjustment under the condition of relatively low parenting stress. Parents who had very stressful parenting experiences reported relatively poor marital adjustment regardless of problem solving behavior.

Parenting Alliance: Main Effect

The main effect of parenting alliance predicting marital adjustment is consistent with the abundance of research demonstrating a significant correlation between the parenting alliance and marital satisfaction (Margolin, Gordis, & John, 2001; Morrill, Hines, Mahmood, & Cordova, 2010). However, these results are not consistent with past research demonstrating a correlation between the parenting alliance and parenting stress (e.g. Camisasca, Miragoli, & Di Blasio, 2014; Hill-Chapman, Herzog, & Maduro, 2013; Norlin & Broberg, 2013). In the present study, the parenting alliance did not correlate with either measure of parenting stress for fathers, and correlated only mildly with the Parent and Family Problems scale for mothers. One possible explanation, for this result is differing participant characteristics. While the aforementioned studies included parents of neurotypical children, children with ID, and children with ASD (respectively), all of those studies included target children under the age of 10 years, while the current study included target children age 6 to 18. It is possible that the association between
parenting stress and parenting alliance weakens as children enter adolescence. There is no research tracking these constructs from childhood into adolescence that would indicate how the correlations between them might change across time. One possible explanation is that the coparenting relationship stabilizes before children enter adolescence, as parents become more experienced and settled into their roles. However, children entering adolescence is a time of greatly increased parenting stress for at least some parents, and the stress might be more subject to fluctuation in this stage of a child’s life. This change might be especially true for parents of children with ID, as their children do not reach the level of independence typically expected in adolescence, and the possibility of lifelong care becomes more salient. Thus the parenting alliance would not be highly correlated with parenting stress in parents of older children and adolescents with ID.

It may be informative to compare parenting alliance scores in parents of children with and without disabilities. Given past findings of differences between ID and control groups on marital satisfaction, and given the association between marital adjustment and the parenting alliance, mean parenting alliance scores may differ as well. Moreover, as Wieland and Baker (2010) suggested of marital adjustment, variance in parenting alliance may be greater in a DD population than a typical population. Differences between parents of children with and without disabilities on the quality of the parenting alliance may influence the quality of marriage among these couples. Additionally, research has suggested that the parenting alliance may mediate (Frank et al., 1991) or moderate (Hill-Chapman, Herzog, & Maduro, 2013) the association between child illness or disability and parenting stress. These studies would suggest that the parenting alliance might exert more influence on the association between disability status and parenting stress than on the association between stress and marital satisfaction. The present results, in which the parenting alliance correlated with dyadic adjustment but not parenting stress is consistent with a model in which the parenting alliance moderates the association between disability status and parenting stress, such that parents with a strong parenting alliance do not experience as much parenting stress as a result of their child’s disability.

**Marital Problem Solving: Main Effects and Interactions**

Results also revealed main effects involving marital problem solving behaviors. For the husbands, a main effect of positive problem solving behaviors revealed that the more husbands
used positive problem solving tactics, the better they rated their marital adjustment. For wives, both the mean score of the problem solving task, and the rate of negative behaviors were main effects, indicating that wives who used higher rates of negative problem solving behaviors rated their marriages as less satisfactory. These results are consistent with considerable past research, as reviewed by Gottman and Notarius (2000), demonstrating that problem solving behaviors are significant predictors of marital adjustment. It is interesting that marital adjustment seems to be more strongly associated with positive problem solving behaviors for husbands and with negative problem solving behavior for wives. Given the cross-sectional nature of this study it is not possible to determine the direction of causality, and associations of this sort are likely to be bidirectional. That is, results may indicate that positive interactions during problem solving are more salient to men when determining how satisfied they are in their marriage, whereas negative interactions are more salient to women when assessing marital satisfaction. However, it is also possible that when men are satisfied in their marriages they tend to use positive problem solving tactics, whereas men who are dissatisfied tend to be neutral. In contrast, women who are dissatisfied with their marriages might tend to use negative problem solving tactics but remain relatively neutral when satisfied. This pattern is consistent with the review by Gottman and Notarius (2000), which explain that wives are more likely to use more demanding tactics while husbands tend to use more withdrawal tactics. As such, different patterns emerge from satisfied and dissatisfied husbands and wives.

In addition to acting as a main effect, marital problem solving, and specifically the use of positive problem solving tactics, significantly moderated the association between parenting stress and marital adjustment for both husbands and wives. However, the way in which parenting stress and problem solving interacted to predict marital satisfaction was not in the hypothesized direction. That is, rather than problem solving skill acting as a buffer against high stress, or allowing parents to benefit from the experience of parenting stress, problem solving skill was an asset at low levels of stress, but it’s benefits were negated when parents experienced high parenting stress. The directionality of this moderation effect is in direct contrast to studies by Cohan and Bradbury (1997) and Neff & Broady (2011), which found that problem solving helped couples remain resilient to or even benefit from life stressors. However, both of the above studies examined newlyweds through the first two years of marriage, rather than parents of children or adolescents with disabilities, which may account for these differing results. The type
of stress experienced by newlyweds, or couples transitioning into new parenthood (as in Neff & Broady, 2011) is quite different, and more within the range of typical life circumstances, as opposed to having a child with special needs. Children with ID, or other developmental disabilities often require a great deal more in the way of time, energy, resources, and accommodations, and may need substantial care for the rest of their lives. Thus, the facilitating effects of marital problem solving might be eliminated at such high levels of stress.

The differing moderation effects between samples suggest that there may be a curvilinear relationship between stress and problem-solving which previous research has not yet detected. That is, the highest levels of stress measured in previous research with normative samples might be similar to the lowest levels of stress experienced by the current sample of parents. It is possible that parents benefit from good problem solving combined with some amount of stress up to a point, after which no amount of good problem solving skill can ameliorate the negative effects of extremely high parenting stress. This curvilinear association would be consistent with most models of the general effects of stress, as illustrated by the Yerkes-Dodson Law, showing that moderate levels of stress tend to be beneficial for performance, while the highest and lowest levels of stress are least beneficial. As one relevant example, Daspe et al. (2013) found a curvilinear relationship between neuroticism and dyadic adjustment in married couples, with the highest and lowest levels of neuroticism corresponding to the lowest levels of dyadic adjustment. Specifically, they suggested that a moderate amount of negative affectivity (including anxiety) was necessary to motivate partners to actively participate in the relationship and attend to the other’s needs and emotions, whereas those at the lowest levels of neuroticism were too passive and those at the highest levels are too disagreeable and emotionally unstable. Clarifying the interaction between parenting stress, problem solving, and dyadic adjustment may entail studying parents of widely varied parenting experiences, using a highly sensitive measure of parenting stress with a wide range of possible scores.

**Parenting Stress**

Analyses revealed both interactions and main effects in regard to parenting stress predicting marital satisfaction. For husbands, when they experienced high stress about the child’s negative impact on the family, the potential benefits of positive problem solving behavior for dyadic adjustment were eliminated. Also, for husbands, high stress related to pessimism about
the child’s future was associated with poor dyadic adjustment regardless of problem solving skill. For wives, in the context of high stress related to pessimism, the benefits of positive problem solving behavior for dyadic adjustment were not evident, but stress related to burdens placed on the family as a result of the disability was not significantly associated with dyadic adjustment. These results suggest that fear about continued burdens related to the child’s disability is taxing on the marriage for both husbands and wives. Thus, it might be important to assist parents of children with developmental disabilities as the children reach adulthood in order to prevent marital disruption. On the other hand, while parent and family problems may affect mothers in different ways, it seems associated with marital satisfaction for fathers only.

The difference of results between spouses may be the result of differing roles or values of each parent. Traditional parenting roles have commonly placed mothers as the primary caregiver, and fathers as the primary provider of financial support. For primary income providers, fear about lifelong financial support may wear on the marriage regardless of problem solving, whereas everyday stresses serve to specifically overwhelm the benefits of good problem solving. For primary caregivers, everyday stresses resulting from the disability may be less impactful on the marriage than problem solving or parenting alliance overall, whereas fear about lifelong caregiving washes out the benefits of good problem solving. Perhaps by age 6-18, mothers have grown accustomed to the added caregiving stresses and burdens associated with caring for their child, and therefore experience less spillover from parenting stress to marital distress. These results are consistent with some previous research suggesting that parenting experiences may be more strongly associated with marital satisfaction in fathers than mothers (e.g. Benzies, Harrison, & Magill-Evans, 2004; Stoneman & Gavidia-Payne, 2006). Thus, how parents view and cope with current disruptions in their family life versus fears about the family’s future are likely to differ based on their roles and experiences within the family.

Nevertheless, the failure to find strong overall main effects of parenting stress predicting marital satisfaction in both parents diverges from past research demonstrating a significant association between parenting stress and marital satisfaction in both mothers and fathers of children with disabilities (e.g. Gerstein, Crnic, Blacher, & Baker, 2009; Mullen, 1997; Quittner et al., 1998). One possible reason for this finding is that earlier studies used a different measure of parenting stress than the current study. It is possible that the Questionnaire on Resources and Stress tapped into a slightly different construct than other measures of parenting stress, because
these other measures were not designed specifically to assess disability-related parenting stress (although the above studies all included disability samples). The QRS asks specifically how the child’s disability interferes with family functioning, whereas others measures ask, for example, how many common stressors a parent faces, or how problematic they find a particular behavior of the child. Therefore, child-related stress caused by a disability might be different from other typical forms of child related stress. Still, given inconsistent results regarding the association between parenting stress and marital satisfaction in parents of children with and without disabilities, future studies may seek to investigate associations between various measures of parenting stress.

Limitations

Because of significant correlations between some moderators and the dyadic adjustment, it is important to carefully consider significant interactions. As Baron and Kenny (1986) note, it is preferable that moderating variables not correlate with predictor or outcome variables. One reason is that a highly intercorrelated moderator could lead to a spurious correlation, as a result of correlating with the interaction term. The other reason is that a main effect could account for so much variance in the outcome that little residual variance remains to be explained by any potentially significant interaction term. Neither of these problems seems likely to have arisen from the main effect of the parenting alliance. Firstly, the parenting alliance did not interact significantly with either measure of parenting stress for either parent. Secondly, the correlation between the parenting alliance and dyadic adjustment does not appear to be high enough to mask interaction effects by appropriating too much variance. In regard to problem solving, average Communication Skills Test scores and frequency of negative problem solving behaviors significantly predicted dyadic adjustment for mothers. However, the mean CST score only interacted with one measure of parenting stress and not the other, suggesting that a spurious interaction is unlikely.

Another potential limitation of this study that should be noted concerns the relatively small sample size. Given the number of regression analyses used in this study, a larger sample size may have clarified the nature of certain interactions which were trending but not significant, such as between the mean CST score and parenting stress for husbands (p = 0.066). This trend is interesting in that it was significant for one spouse but not for the other. Thus it would be useful
to know if this interaction is the same for both partners, or a difference between husbands and wives. For future studies, it may be desirable to obtain a larger sample size, or use a different method of analysis, such as multi-level modeling or hierarchical linear modeling, in order to nest individual spouses within a couple, thus increasing power.

**Summary and Conclusions**

The results did not support the hypothesis that the parenting alliance or marital problem solving would reduce or reverse the negative association between parenting stress and marital adjustment. Firstly, the parenting alliance did not moderate the association between parenting stress and marital satisfaction as predicted, but rather was a significant main effect in predicting marital satisfaction, independent of parenting stress. Marital problem solving, and specifically the use of *positive* problem solving behaviors, did moderate the association between parenting stress and marital satisfaction for mothers and fathers, but rather than acting as a resiliency factor at high levels of stress, was an asset only at low levels of stress, and was negated at high levels of stress. Interestingly, mothers and fathers were differentially influenced by different forms of parenting stress, suggesting that different aspects of the parenting experience influence, or are influenced by, marital satisfaction for husbands and wives.

These results suggest that couples experiencing low to moderate levels of parenting stress would benefit from improving their marital problem solving skills. However, for couples experiencing the highest levels of parenting stress, effort should be made to reduce parenting stress, rather than focus on problem solving skills to cope with high stress. If, in fact, a strong parenting alliance helps to bolster marital satisfaction by preventing or alleviating parenting stress, parents experiencing extremely high levels of parenting stress may seek to improve their coparenting relationship, which have a greater impact on marital outcomes than parenting stress. Finally, future research may seek to specifically target more distressed parents in order to identify factors that may help those couples cope with or alleviate parenting stress when good problem solving is insufficient.
**TABLES**

Table 1. Demographic Data for 114 mothers and fathers of children with intellectual disability.

<table>
<thead>
<tr>
<th></th>
<th>Target Child Age (years)</th>
<th>Father Age (years)</th>
<th>Mother Age (years)</th>
<th>Length of marriage (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>11.38</td>
<td>39.33</td>
<td>36.83</td>
<td>152.82</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>3.48</td>
<td>7.40</td>
<td>6.22</td>
<td>87.74</td>
</tr>
<tr>
<td><strong>Min</strong></td>
<td>6.08</td>
<td>25.00</td>
<td>25.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Max</strong></td>
<td>18.92</td>
<td>64.00</td>
<td>59.00</td>
<td>402.00</td>
</tr>
</tbody>
</table>

Table 2. Means and standard deviations (SD) for dependent and independent variables.

<table>
<thead>
<tr>
<th></th>
<th>Husbands</th>
<th>Wives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>DAS</td>
<td>112.72</td>
<td>15.68</td>
</tr>
<tr>
<td>QRS1</td>
<td>8.03</td>
<td>2.21</td>
</tr>
<tr>
<td>QRS2</td>
<td>4.73</td>
<td>2.85</td>
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<tr>
<td>PA</td>
<td>2.90</td>
<td>0.31</td>
</tr>
<tr>
<td>MCST</td>
<td>3.23</td>
<td>0.32</td>
</tr>
<tr>
<td>rfPOS</td>
<td>0.23</td>
<td>0.16</td>
</tr>
<tr>
<td>rfNEG</td>
<td>0.06</td>
<td>0.10</td>
</tr>
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</table>
Table 3. Pearson R values for bivariate correlations for husbands

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DAS</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. QRS1</td>
<td>-.064</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. QRS2</td>
<td>-.232*</td>
<td>.552**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PA</td>
<td>.292**</td>
<td>.022</td>
<td>-.090</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. MCST</td>
<td>.138</td>
<td>.094</td>
<td>.107</td>
<td>.137</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>6. rfPOS</td>
<td>.130</td>
<td>.112</td>
<td>.118</td>
<td>.119</td>
<td>.845**</td>
<td>-</td>
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</tr>
<tr>
<td>7. rfNEG</td>
<td>-.152</td>
<td>-.009</td>
<td>.013</td>
<td>-.139</td>
<td>-.689**</td>
<td>-.268**</td>
<td>-</td>
</tr>
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</table>

*p<0.05 (two-tailed). **p<0.01 (two-tailed).

Note. DAS = Dyadic Adjustment Scale; QRS1 = Questionnaire on Resources and Stress, Parent and Family Problems subscale; QRS2 = Questionnaire on Resources and Stress, Pessimism subscale; PA = Parenting Alliance General subscale of the Family Experiences Questionnaire; MCST = Mean score for the Communication Skills Test; rfPOS = rate of frequency of positive tactics used in the Communication Skills Test; and rfNEG = rate of frequency of negative tactics used in the Communication Skills Test.

Table 4. Pearson R values for bivariate correlations for wives.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DAS</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. QRS1</td>
<td>-.126</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. QRS2</td>
<td>-.135</td>
<td>.357**</td>
<td>-</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. PA</td>
<td>.532**</td>
<td>-.191*</td>
<td>.007</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. MCST</td>
<td>.211*</td>
<td>-.051</td>
<td>.166</td>
<td>.122</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. rfPOS</td>
<td>.080</td>
<td>-.017</td>
<td>.142</td>
<td>.038</td>
<td>.845**</td>
<td>-</td>
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<tr>
<td>7. rfNEG</td>
<td>-.325**</td>
<td>.119</td>
<td>-.099</td>
<td>-.216*</td>
<td>-.695**</td>
<td>-.244**</td>
<td>-</td>
</tr>
</tbody>
</table>

*p<0.05 (two-tailed). **p<0.01 (two-tailed).

Note. DAS = Dyadic Adjustment Scale; QRS1 = Questionnaire on Resources and Stress, Parent and Family Problems subscale; QRS2 = Questionnaire on Resources and Stress, Pessimism subscale; PA = Parenting Alliance General subscale of the Family Experiences Questionnaire; MCST = Mean score for the Communication Skills Test; rfPOS = rate of frequency of positive tactics used in the Communication Skills Test; and rfNEG = rate of frequency of negative tactics used in the Communication Skills Test.
Table 5. Regression results for husbands.

<table>
<thead>
<tr>
<th>Moderator</th>
<th>Model</th>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>p</th>
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<tbody>
<tr>
<td>Parenting Alliance</td>
<td>1</td>
<td>QRS1</td>
<td>.462</td>
<td>.761</td>
<td>.065</td>
<td>.607</td>
<td>.545</td>
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<tr>
<td></td>
<td></td>
<td>QRS2</td>
<td>-1.342</td>
<td>.592</td>
<td>-.244</td>
<td>-2.268</td>
<td>.025*</td>
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<tr>
<td></td>
<td></td>
<td>PA</td>
<td>13.701</td>
<td>4.568</td>
<td>.269</td>
<td>3.000</td>
<td>.003*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QRS1 x PA</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-.938</td>
<td>.350</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QRS2 x PA</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-.450</td>
<td>.654</td>
</tr>
<tr>
<td>R² = .131</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = .001</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Mean CST Score</td>
<td>1</td>
<td>QRS1</td>
<td>.601</td>
<td>.778</td>
<td>.085</td>
<td>.773</td>
<td>.441</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QRS2</td>
<td>-1.631</td>
<td>.604</td>
<td>-.296</td>
<td>-2.700</td>
<td>.008*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCST</td>
<td>7.911</td>
<td>4.494</td>
<td>.162</td>
<td>1.760</td>
<td>.081</td>
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<tr>
<td></td>
<td></td>
<td>QRS1 x MCST</td>
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<td>-</td>
<td>-</td>
<td>-1.860</td>
<td>.066</td>
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<td></td>
<td></td>
<td>QRS2 x MCST</td>
<td></td>
<td>-</td>
<td>-</td>
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<td>.378</td>
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<td>R² = .086</td>
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<td>.776</td>
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</table>

*Note. Main effects entered simultaneously in Block 1, interaction terms entered stepwise in Block 2. Shaded cells indicate that this variable was excluded from the model.

Note. DAS = Dyadic Adjustment Scale; QRS1 = Questionnaire on Resources and Stress, Parent and Family Problems subscale; QRS2 = Questionnaire on Resources and Stress, Pessimism subscale; PA = Parenting Alliance General subscale of the Family Experiences Questionnaire; MCST = Mean score for the Communication Skills Test; rfPOS = rate of frequency of positive tactics used in the Communication Skills Test; and rfNEG = rate of frequency of negative tactics used in the Communication Skills Test.
Table 6. Regression results for wives.

<table>
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<th>Moderator</th>
<th>Model</th>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>p</th>
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<td></td>
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<td>-</td>
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<td>.713</td>
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<tr>
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<td></td>
<td>QRS2 x PA</td>
<td>-</td>
<td>-</td>
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<td>.989</td>
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<td>.008*</td>
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<td>-.383</td>
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<td>.008*</td>
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<td>.406</td>
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<td>QRS2 x rfPOS</td>
<td>-8.201</td>
<td>3.989</td>
<td>-.194</td>
<td>-2.056</td>
<td>.042*</td>
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<td>.754</td>
<td>-.030</td>
<td>-.307</td>
<td>.760</td>
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<td>-.158</td>
<td>-.1642</td>
<td>.103</td>
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<td>rfNEG</td>
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<td>-3.729</td>
<td>&lt;.001*</td>
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<tr>
<td></td>
<td></td>
<td>QRS2 x rfNEG</td>
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<td>-</td>
<td>-</td>
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<td>.419</td>
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</table>

*p < 0.05

Note. Main effects entered simultaneously in Block 1, interaction terms entered stepwise in Block 2. Shaded cells indicate that this variable was excluded from the model.

Note. DAS = Dyadic Adjustment Scale; QRS1 = Questionnaire on Resources and Stress, Parent and Family Problems subscale; QRS2 = Questionnaire on Resources and Stress, Pessimism subscale; PA = Parenting Alliance General subscale of the Family Experiences Questionnaire; MCST = Mean score for the Communication Skills Test; rfPOS = rate of frequency of positive tactics used in the Communication Skills Test; and rfNEG = rate of frequency of negative tactics used in the Communication Skills Test.
FIGURES

Figure 1. Hypothesized moderation model for the present study.

Figure 2. Dyadic adjustment for husbands based on frequency of positive problem solving behavior and level of Parent and Family Problems. This interaction is significant ($p = 0.014$).
Figure 3. Dyadic adjustment for wives based on mean CST score and level of Pessimism. This interaction is significant ($p = 0.008$).

Figure 4. Dyadic adjustment for wives based on frequency of positive problem solving behavior and level of Pessimism. This interaction is significant ($p = 0.042$).
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Appendix A – Questionnaire on Resources and Stress

QUESTIONNAIRE ON RESOURCES AND STRESS

Please read each of the following statements and answer either “true” or “false” depending on how accurate you feel the statement is for you and your family. There are many blanks in the questions.

If it is difficult to decide true (1) or false (2), answer in terms of what you or your family feel or do most of the time. By family, we are referring to your family as it is currently. Sometimes the statements refer to problems your family does not have. Nevertheless, they can be answered true or false, even then. Please respond to all statements. If your answer is “false” or no, circle 0. If your answer is “true” or yes, circle 1.

IMAGINE ________’S NAME FILLED IN ON EACH BLANK.

<table>
<thead>
<tr>
<th></th>
<th>False</th>
<th>True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Other members of the family have to do without things because of</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2. Our family agrees on important matters.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3. I worry about what will happen to ________ when I can no longer take care of him/her.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4. The constant demands of care for ________ limit growth and development of someone else in our family.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5. I have accepted the fact that ________ might have to live out his/her life in some special setting (e.g. group home, institution)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6. I have given up things I have really wanted to do in order to care for ________</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7. ________ is able to fit into the family social group.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8. In the future, our family’s social life will suffer because of increased responsibility and financial stress.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9. It bothers me that ________ will always be this way.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10. I can go visit with friends whenever I want.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>11. Taking ________ on vacation spoils pleasure for the whole family.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>12. The family does as many things together now as we ever did.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>13. I get upset with the way life is going.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>14. ________ doesn’t do as much as he/she should be able to do.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>15. There are many places where we can enjoy ourselves as a family when ________ comes along.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>16. ________ is over-protected.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>17. ________ has too much time on his/her hands.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>18. I am disappointed that ________ does not lead a normal life.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>19. Time drags for ________ especially free time.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>20. It is easy for me to relax.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>True</td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>------</td>
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<tr>
<td>21. I worry about what will be done with ______ when he/she gets older.</td>
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<td>1</td>
</tr>
<tr>
<td>22. I get almost too tired to enjoy myself.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>23. There is a lot of anger and resentment in our family.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>24. The constant demands to care for ______ limit my growth and development.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>25. I feel sad when I think of ______.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>26. I often worry about what will happen to ______ when I can no longer take care of him/her.</td>
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<td>1</td>
</tr>
<tr>
<td>27. Caring for ______ puts a strain on me.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>28. Members of our family get to do the same kinds of things other families do.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>29. ______ will always be a problem to us.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>30. I rarely feel blue.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>31. I am worried much of the time.</td>
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</table>
Appendix B – Dyadic Adjustment Scale

MARITAL QUESTIONNAIRE (DAS)

Most persons have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the list.

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<th>Almost Always Agree</th>
<th>Occasionally Disagree</th>
<th>Frequently Disagree</th>
<th>Almost Always Disagree</th>
<th>Always Disagree</th>
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<td>3. Religious matters</td>
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<td>4. Demonstration of affection</td>
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<td>6. Sex relations</td>
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<td>7. Conventionality (correct or proper behavior)</td>
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</tr>
<tr>
<td>15. Career decisions</td>
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<td></td>
<td>All the time</td>
<td>Most of the time</td>
<td>More Often than not</td>
<td>Occasionally</td>
<td>Rarely</td>
<td>Never</td>
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<td>16.</td>
<td>How often do you discuss or have you considered divorce, separation, or terminating your relationship?</td>
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<td>17.</td>
<td>How often do you or your mate leave the house after a fight?</td>
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<td>18.</td>
<td>In general, how often do you think that things between you and your partner are going well?</td>
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<td>19.</td>
<td>Do you confide in your mate?</td>
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<td>20.</td>
<td>Do you ever regret that you got married? (or lived together)?</td>
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<td>21.</td>
<td>How often do you and your partner quarrel?</td>
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<td>22.</td>
<td>How often do you and your mate &quot;get on each other’s nerves?&quot;</td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>Every Day</td>
<td>Almost every day</td>
<td>Occasionally</td>
<td>Rarely</td>
<td>Never</td>
<td></td>
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<tr>
<td>23.</td>
<td>Do you kiss your mate?</td>
<td></td>
<td></td>
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<td>24.</td>
<td>Do you and your mate engage in outside interests together?</td>
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</tbody>
</table>
HOW OFTEN WOULD YOU SAY THE FOLLOWING EVENTS OCCUR BETWEEN YOU AND YOUR MATE?

25. Have a stimulating exchange of ideas
   Never _______ Less than once a month _______ Once or twice a month _______ Once or twice a week _______ Once a day _______ More often _______

26. Laugh together _______ _______ _______ _______ _______ _______

27. Calmly discuss something _______ _______ _______ _______ _______ _______

28. Work together on a project _______ _______ _______ _______ _______ _______

THESE ARE SOME THINGS ABOUT WHICH COUPLES SOMETIMES AGREE, SOMETIMES DISAGREE. INDICATE IF EITHER ITEM BELOW CAUSED DIFFERENCES OF OPINIONS OR WERE PROBLEMS IN YOUR RELATIONSHIP DURING THE PAST FEW WEEKS. (CHECK YES OR NO)

29. Yes _______ No _______ Being too tired for sex.

30. _______ _______ Not showing love.

31. Which of the following statements best describes how you feel about the future of your relationship? (CHECK ONLY ONE)

   _______ I want desperately for my relationship to succeed, and would go to almost any length to see that it does.
   _______ I want very much for my relationship to succeed, and will do all I can to see that it does.
   _______ I want very much for my relationship to succeed, and will do my fair share to see that it does.
   _______ It would be nice if my relationship succeeded, but I can't do much more than I am doing now to help it succeed.
   _______ It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going.
   _______ My relationship can never succeed, and there is no more that I can do to keep the relationship going.

32. The numbers below represent different degrees of happiness in your relationship. The middle point, "happy", represents the degree of happiness of most relationships. PLEASE CIRCLE THE NUMBER THAT BEST DESCRIBES THE DEGREE OF HAPPINESS, ALL THINGS CONSIDERED, OF YOUR RELATIONSHIP.

   0  1  2  3  4  5  6
   Extremely Unhappy  Fairly Unhappy  A Little Unhappy  Happy  Very Unhappy  Extremely Unhappy  Perfect

   (DAS)  3

500
Appendix C – Family Experiences Questionnaire

Circle: Father / Mother / Other: ____________________________

THE FAMILY EXPERIENCES QUESTIONNAIRE

INSTRUCTIONS: Using the scale described below circle the letter(s) that indicate how much you agree with each of the following statements.

SD= Strongly Disagree   D= Disagree   A= Agree  SA= Strongly Agree

Example item:
Ex: My spouse/partner and I like to play tennis. SD D A SA

The circle around the D shows that you DISAGREE with this statement. If you STRONGLY DISAGREE you would circle the SD, if you AGREE you would circle the A, and if you STRONGLY AGREE you would circle SA.

SPOUSE/PARTNER= ____________________________

*NOTE: If you do not have a spouse, please answer only the items marked *.

Now complete each of the following items in the same way:

1. My spouse tries to have the last word in how we raise our children. SD D A SA

2. I know that I am doing a good job as a parent. SD D A SA

3. Being a parent turned out not to be as difficult as I thought it would be. SD D A SA

4. My spouse thinks that I am a bad influence on the children. SD D A SA

5. My spouse is a good parent. SD D A SA

6. My spouse appreciates how hard I work at being a good parent. SD D A SA

7. My spouse backs me up as a parent. SD D A SA

8. Being a parent makes me feel drained and depleted. SD D A SA

9. My spouse and I feel we are growing and maturing together through our experiences as parents. SD D A SA

10. My spouse is willing to make some personal sacrifices in order to help with the parenting. SD D A SA

11. My spouse tries to make sure I get some time for myself away from the children. SD D A SA

12. I have the knowledge I need to be a good parent. SD D A SA

13. When there is a crisis with the children my spouse doesn't help me as much as I would like. SD D A SA

14. I have learned that if my kids need something important I can rely on my spouse to help provide it. SD D A SA
32. As a parent, I cannot seem to do anything right in my spouse's eyes.

33. My spouse and I work closely together as parents.

34. My spouse makes too many demands on me as a parent.

*35. I often worry that I don't know enough to be a good parent.

36. I feel too ashamed about my mishaps with the children to talk them over with my spouse.

37. I am afraid of my spouse's anger when I do something wrong with the kids.

38. I often think my children would be better off with one parent (not both of us).

39. I do not feel that parenting is as much fun as I hoped it would be.

40. I feel closer to my children than to my spouse.

41. My spouse and I agree on how much time we each should spend with the children.

*42. I often feel guilty about neglecting my children.

43. Sometimes I feel like my spouse is one of the children instead of my partner.

44. My spouse pays too little attention to the children.

45. My spouse still wants to "do his or her own thing" instead of being a responsible parent.

46. My spouse does not trust my abilities as a parent.

*47. Juggling all the responsibilities of being a parent is one of my talents.

48. My spouse preaches a lot about how to be a good parent but rarely puts it into practice.

*49. Parenting means a lot of responsibilities and problems but I always feel that I can cope with the difficulties that come along.

50. My spouse sees parenting as my responsibility.

51. I worry about the children's safety when they are alone with my spouse.

52. My spouse expects too much from the children.
15. My spouse does not really enjoy being alone with the children.  
*16. I should have read more books on parenting because I often feel like I don’t know what I am doing.  
17. My spouse likes to play with the children, but then leaves the dirty work to me.  
18. I appreciate how much my spouse tries to be a good parent.  
*19. If I could do it over again I would raise my children the same way I am raising them now.  
20. My spouse resents that I have to give so much of my time to the children.  
*21. I often worry that I am letting my children down.  
22. My spouse makes me look like the "bad person" in the eyes of our children.  
23. When the children are sick I can turn to my spouse for support.  
*24. Whenever I start feeling comfortable as a parent something goes wrong and the doubts start all over again.  
25. My spouse has a good feel for the kids and what they might need.  
*26. I worry that I am not doing the right thing as a parent.  
27. My spouse does not live up to my idea of a good parent.  
28. When I make a mistake with the kids I can talk it over with my spouse.  
29. My spouse helps out with the parenting whenever possible.  
*30. No matter how hard I try, I never seem to be a good enough parent.  
31. My spouse enjoys me both as a parent and a lover.
53. My spouse is too self-centered to be a good parent.

*54. When there is a crisis with the children, I know that I will do what needs to be done.

55. I feel over-burdened as a parent because my spouse is often too involved with other things to carry a fair share of the load.

56. When I feel at my wits end as a parent my spouse gives me the extra support I need.

57. My spouse makes me feel that I am the best possible parent for our children.

END
Appendix D – Communication Skills Test: Scoring Criteria

**VERY POSITIVE (5)**
1) Summarize other/both
2) Checking out
3) Opinion/feeling probe
4) Solution Proposal
5) X,Y,Z - feedback
6) Back on Beam
7) Meta-communication
8) Validation

**NEUTRAL (3)**
1) Problem-talk
2) Question
3) Information

**VERY NEGATIVE (1)**
1) Off Beam
2) Kitchen sinking - Cross complaining
3) Mindreading
4) Putdown
5) Summarizing self- no clarification needed/requested
6) Blaming
7) Character Assassination
8) Deny Responsibility - "Yes, but..."
9) Command/patronizing
10) Very negative nonverbal
    voice tone - short, sarcastic, condescending
11) Avoidance/Withdrawal

**POSITIVE (4)**
1) Feeling statement
2) Agree
3) Disagree with rationale
4) Omitted
5) Compliment
6) Clarification Request
7) Accept Responsibility
8) Empathy
9) Summarize self - concise or to clarify
10) Humor
11) Positive nonverbal
    a) face - smile, laugh
    b) voice tone - caring, warm, empathic, concerned, affectionate, cheerful
    c) positive physical contact
       - touch, pat

**NEGATIVE (2)**
1) Confused problem-talk
2) Dogmatic opinion
3) Disagree without rationale
4) Disruptive extraneous comments
5) Avoidant question
6) Negative nonverbal
    a) face - frown, sneer, glare, angry, cry, no eye contact
    b) voice tone - disinterested, cold, impatient, clipped, whining, angry, gruff
    c) body position - rude gestures, turn away
7) Leading question