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## Autism and Parental Marital Satisfaction: The Role of Adequacy of Resources

Geneeta Kaliah Chambers

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Autism and Parental Marital Satisfaction: The Role of Adequacy of Resources

by

Geneeta Kaliah Chambers

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A Doctoral Project submitted in partial satisfaction of  
the requirements for the degree of  
Doctor of Psychology

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December 2005

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Each person whose signature appears below certifies that this doctoral project in his opinion is adequate, in scope and quality, as a doctoral project for the degree Doctor of Psychology.



\_\_\_\_\_  
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, Chairperson



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Matt L. Riggs, Professor of Psychology

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## ABBREVIATIONS

UCDD University Center for Developmental Disabilities

## ABSTRACT OF THE DOCTORAL PROJECT

Autism and Parental Marital Satisfaction: The Role of Adequacy of Resources

by

Geneeta Kaliah Chambers

Doctor of Psychology, Graduate Program in Psychology  
Loma Linda University, December 2005  
Dr. Charles D. Hoffman, Chairperson

The goal of the present study was to expand on the existing literature exploring families with children who have developmental disabilities, particularly autism. Previous studies have been constrained by univariate approaches that have failed to adequately capture the nuances of family functioning. Using an ecological/context approach, stemming from an ongoing research program conducted within a university-based treatment center, the present study attempted to improve on the conceptualization of interrelationships among family members and the role that contextual factors play within that dynamic. Specifically, the present study explored the influence of children's level of autism on parents' reports of their marital satisfaction and examined whether parents' perception of the adequacy of their resources influenced any demonstrated effects of autism on marital adjustment.

Data were collected from approximately 117 parents of children enrolled in the treatment program. Parents who volunteered completed a survey that included all of the instruments utilized in the present study: the Gilliam Autism Rating Scale (GARS), which measured severity of autistic behavior; the Dyadic Adjustment Scale (DAS), which assessed parents' reports of their marital satisfaction, and the Perceived Adequacy of

Resources Scale (PARS), which measured parents' perceptions of the adequacy of their resources.

Correlational analyses verified that as severity of autism increased, marital satisfaction decreased and revealed a negative relationship between severity of autism and perceived adequacy of resources. Finally, hierarchical multiple regression analysis was conducted to test whether perception of adequate resources would serve as a moderator between severity of autism and marital satisfaction; however, these findings did not yield statistically significant results. The framework used at the treatment center, and implications for further research to support empirically based interventions will be discussed.

## Introduction

The current study was developed from the research program in progress at the University Center for Developmental Disabilities (UCDD) at California State University, San Bernardino. This center provides intervention and support services to parents, siblings, and children with developmental disabilities (90% of whom carry a diagnosis of autism). Research in the area of families who have children with developmental disabilities have been underrepresented in the literature, and most studies appear to be fraught with methodological constraints, a point to be clarified throughout this review (Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001; Quittner & DiGirolamo, 1998; Sontag, 1996). Thus, after several years of providing intervention and treatment services, UCDD began developing a research program to not only evaluate the effectiveness of the services provided, but to also systematically expand the research literature beyond the use of univariate approaches that have constrained much of the developmental disability research (Sweeney & Hoffman, 2004). Some authors believe that an explanation for the frequent use of this univariate approach is due to the “lack of theory driven research... and ...limited assessment tools,” resulting in research designs that are inadequate to capture the complexities of family process (p. 71, Quittner & DiGirolamo, 1998).

To address these concerns, UCDD and the present study utilized an ecological-contextual model firmly grounded in systems theory to conceptualize how having a child with a developmental disability may impact and be impacted by family functioning (Bronfenbrenner, 1986; Sontag, 1996). Systems theory considers each family member as a part of a functioning whole, and emphasizes how interrelationships and reciprocal interactions between individuals, contributes to how well that family functions

(Friedman, 1985). With these theoretical roots, the ecological model incorporates a contextual component that evaluates multiple levels of influence that can either be examined at the micro-level (the individual and the family) or the macro-level (broader environmental influences, i.e. society), and can be ultimately be measured over time (Bronfenbrenner, 1986; Sontag, 1996). Using this perspective, individuals can be seen as part of “interrelated and interacting systems in which patterns of changing relations occur” (p. 9, Hauser-Cram, et al, 2001). In other words, individual child characteristics, parent factors, and specific contextual factors that may explain how having a child with a disability influences family functioning, can be examined more thoroughly. This integrative approach has become widely accepted in the description of the nature of family relationships as they relate to children with developmental disabilities (Sontag, 1996); therefore allowing the present study to examine more dynamic and complex relationships that have been inadequately explored in previous studies.

These dynamic and complex relationships are particularly important in developmental disability research because of the unique biological factors that tend to influence the psychological and social functioning of the disabled child, in addition to other members of the family (Hauser-Cram, et al, 2001; Quittner & DiGirolamo, 1998; Sontag, 1996). These biological factors can be viewed as “personal attributes that have the power to affect subsequent psychological and social growth,” what Bronfenbrenner defined as *developmentally instigative* characteristics (Sontag, 1996).

For the purposes of the present study, *developmentally instigative* characteristics can be illustrated in a description of qualities that are associated with a prototypical developmental disability, like autism (Kronenberger & Meyer, 2001). To reiterate,

approximately 90 percent of the children with developmental disabilities at UCDD have at least, in part, a diagnosis of autism (Sweeney & Hoffman, 2004). Kronenberger and Meyer (2001) describe autism as a disorder that occurs more often in boys than in girls (3-4:1) and can be characterized by deficits in three major areas: social interactions, communication skills, and restricted activities, interests, and behaviors. Social interaction impairments for children with autism may be described as a lack of appropriate nonverbal social behavior, (e.g. eye contact), peer relationships, empathy, and reciprocity. Communication impairments include language delay, inappropriate use of language, inability to initiate and sustain conversation, and reduced imaginative play. Children with autism often engage in restricted interests and behaviors, and changes in routine can cause significant distress for them. These children tend to focus on odd objects and display extreme interests in circumscribed activities. The above-named characteristics are a result of biological impairments that seem to influence the kinds of experiences that a child with this disability will have, and ultimately evoke particular responses from the environment. By identifying the specific characteristics associated with autism, researchers can measure level of severity or specific aspects of the disorder that can explain its effect on aspects of family functioning, such as marital satisfaction (Hauser-Cram, et al, 2001).

Unfortunately, past studies have not implemented this level of inquiry and have relied heavily on univariate approaches to determine if specific relationships do indeed exist (i.e. does having a child with autism influence marital satisfaction) (Sweeney & Hoffman, 2004). By working from the broad ecological-contextual perspective described above, an advantage of the present study is that it not only acknowledges that these

relationships exist, but it also inquires into how one variable specifically influences another. By using continuous measures, the present study can incorporate more statistically sophisticated approaches (i.e. regression analysis or structural equation modeling) to enhance its predictive ability (Quittner & DiGirolamo, 1998). Specifically, the ecological-contextual approach allows for the exploration of the mechanisms through which these relationships are established and maintained. This can be accomplished by examining possible mediators or moderators that account for a large amount of the variance within these relationships (Quittner & DiGirolamo, 1998). In other words, what factors explain the nature of the potential relationship between severity of autism and marital satisfaction?

The next section presents literature that has explored research in the marital satisfaction domain and how it applies to families who have children with developmental disabilities. Since the purpose of the present study is to clarify the nature of the relationship between these two variables, it is important to expand on those factors, which may explain specifically, how having a child with a disability, influences the marital relationship. The literature review is reflective of the two levels of inquiry in the present study: the first identifies a relationship of the variables of interest (severity of autism and marital satisfaction), and the second explores those factors that explain why such a relationship exists (potential moderators). This information is then used as evidence to support the necessity of and the goals for the present study.

## Review of the Literature

For years, family researchers have explored the factors that contribute to lowered overall marital satisfaction. Initially, research indicated that a primary influence on marital satisfaction was transitioning to parenthood, suggesting that once married couples became parents, their reported levels of marital satisfaction tended to decrease (Levy-Shiff, 1994). These results led researchers to inquire into the possible explanations for such a phenomenon. For instance, Levy-Shiff (1994) believed that the amount of invested energy spent with the child as opposed to the married partner was a possible explanation for lowered levels of marital satisfaction. Another reason may have been that with parenthood, there is an increase in the amount of chores and tasks to organize, which could also contribute to a decrease in satisfaction. Finally, Levy-Shiff (1994) suggested that managing a child's "difficult" behaviors accounted for much of the influence that becoming a parent has on the marital relationship. Researchers theorized that the specific factors noted above, contributed to an increase in stress levels, which in part, explained the difficulty in marital adjustment (Quittner & DiGigoroLamo, 1998). For families with children without special needs, the influences of parental stress are not clinically significant (Levy-Shiff, 1994). However, in light of the ecological-contextual perspective, it may be reasonable to expect that families who have children with developmental disabilities are directly influenced by the *developmentally instigative* characteristics inherent in the disorders, thereby possibly contributing to impaired family functioning. Therefore, the first level of inquiry in the present study is to examine whether parents of children with developmental disabilities are at more risk of experiencing marital distress than parents of non-disabled children.

Unfortunately, despite a thorough literature search, it is noted that very few researchers have examined marital satisfaction in the developmental disability domain. Koegel, Schribman, O'Neil, and Burke (1983) examined mothers of children with autism and found that when compared to normative samples, they did not differ on measures of marital adjustment. Others have also noted that these parents often report enhanced marital relationships following the birth of their disabled child (Rodrigue, Morgan, and Geffken, 1990). The results of these studies suggest that having a child with a developmental disability does not put inordinate stress on the family, and as a result does not have deleterious effects on overall family functioning, including marital adjustment. Though these researchers, in particular, believed that parenting a disabled child did not have a significant affect on the marital relationship, there is more recent and compelling evidence to suggest otherwise.

For instance, Quittner and DiGirolamo (1998) reviewed clinical and anecdotal evidence suggesting that having a child with a serious, chronic illness tended to increase the amount of conflict between parents and provoke problems with communication and intimacy. They then conducted a study that examined 224 mothers of pre-school children with profound hearing loss, seizure disorders, and Cystic Fibrosis. They found that 25-37 percent of these samples reported lower marital satisfaction on the Dyadic Adjustment Scale (DAS), compared to only 17 percent in the control group (families of non-disabled children). These results suggest that parents of children with chronic disabilities are more likely to experience lowered marital satisfaction than parents of typically developing children. To explain their results, Quittner and DiGirolamo hypothesized that because of greater care-giving demands, inequities in the division of household and childcare tasks,

and difficulties finding alternate childcare that could provide temporary relief from responsibilities, parents may experience an increase in stress. In this instance, parental stress is viewed as a viable explanation for how having a child with a disability can indirectly influence marital satisfaction. While this makes sense intuitively, Quittner and DiGirolamo's methodology and design did not include measurement of such variables within the study itself, and thus it failed to explain why parents of children with disabilities experience lowered marital satisfaction. They concluded that it was important to move beyond the mere identification of associations to pinpoint clearly the source of strain on marital satisfaction. While this study provided useful information regarding the relationship among a child's disability and its effect on the parents' relationship, it appears to be fraught with limitations. These include heterogeneous comparison groups (grouping profound hearing loss, seizure disorder, and Cystic Fibrosis into one clinical group) and categorical data analysis. In the present study, these concerns were addressed, first by limiting the focus to one type of disability (autism) and second, by including a continuous measure of that disability to allow for more statistical freedom. By doing this, severity of the disability (not the mere presence of it) could be explored as a possible predictor of lowered marital satisfaction.

To expand on this point, research conducted by Jessor (2002) at the University Center for Developmental Disabilities, specifically examined whether severity of autism effected marital satisfaction. She used the Gilliam Autism Rating Scale (GARS), which is a continuous measure of autism, to examine whether illness severity impacted marital satisfaction, measured by the Dyadic Adjustment Scale (DAS). Her results suggested that as severity of autism increased, levels of marital satisfaction tended to decrease. She also

discovered that as the child's level of "stereotypical behaviors" (more severe aggressive and withdrawn behaviors) increased, then parents' scores on the marital satisfaction scale tended to decrease more dramatically. Much like the previous study, Jesser (2002) hypothesized that this relationship existed because stereotypical behaviors were more difficult to manage, therefore they were likely to heighten parents' stress levels, thus explaining its influence on marital satisfaction scores.

It is interesting that researchers who have noted a significant, negative relationship between child's disability and marital satisfaction, have alluded to stress as a contributory factor, but have not measured its influence directly. To support such claims, Morris (2001) not only explored how severity of disability influenced marital satisfaction, but also measured how these two variables either influenced or were influenced by parental stress. With 42 families, Morris (2001) utilized the Parenting Stress Index (PSI), the Dyadic Adjustment Scale (DAS) and the Child Behavior Checklist (CBCL) to examine whether severity of Attention Deficit Hyperactivity Disorder was shown to have effects on marital satisfaction. Her results indicated that severity of symptoms is positively correlated with parental stress and negatively correlated with marital satisfaction. What this research further suggested, was that as parental stress increased as a function of disability severity, then marital satisfaction tended to decrease, implying a possible mediating effect (Morris, 2001). However, because she only utilized a correlational analysis, Morris (2001) was unable to make causal inferences about the nature of the identified associations. But, by specifying type and severity of disability, utilizing continuous measures, and employing a more sophisticated approach, similar to that of the present study, Morris' research brings us closer to explaining the nature of the

relationship between severity of disability and marital satisfaction (Hauser-Cram, et al, 2001; Quittner & DiGirolamo, 1998; Sontag, 1996).

Now that I have reviewed the literature relating child's disability and marital satisfaction, two broad camps have become apparent: one suggests that a child's disability has no effect on marital functioning, and another which proposes that it does (Rodrigue, Morgan, and Geffken, 1990). Though the evidence may appear inconsistent, most studies imply a negative relationship. Therefore the first level of inquiry in the present study can be summarized in three important points. First, having a child with a developmental disability increases the likelihood of experiencing lower marital satisfaction (Quittner & DiGirolamo, 1998). Second, the more severe the child's disability, the lower the scores on marital satisfaction scales (Jesser, 2002). And third, severity of disability increases parental stress levels, which has been demonstrated to decrease marital satisfaction scores, as well (Morris, 2001).

Because it is a goal of the present study to move the research beyond the mere identification of variable associations, the second level of inquiry involves identifying and exploring the nature of such relationships. To do this, one must identify the variable(s) that account for much of the variance within a given relationship. In the aforementioned research studies, stress was viewed as a viable explanation for how children with disabilities maintained an influence on marital satisfaction. Research has shown that parents of children with disabilities have higher levels of stress (Dyson, 1997; Hauser-Cram, et al; Morris, 2001; Neil, 2002); however, it alone does not appear to be a sufficient explanation for why these parents experience lowered marital satisfaction. Stress is a broad and elusive construct, and when attempting to explain its influence on

family functioning, it may be more important to measure that which causes stress, as opposed to stress itself. For example, the above studies proposed that stress may be a factor because of greater care-giving demands, problems finding alternate childcare, managing the child's difficult behaviors, and other such variables, which researchers believed contributed to lower marital satisfaction (Jesser, 2002; Levy-Shiff, 1994; Quittner & DiGirolamo, 1998). Therefore, to understand fully how having a child with a developmental disability influences this variable, it is important to examine specific stress-producing factors that serve as potential mediators or moderators within this relationship.

The specific stress-producing factors believed to increase parent's stress levels, are related to a lack of what researchers commonly refer to as family resources (Minnes, 1988). Family resources can be defined as "assets that have the potential utility for accomplishing goals and thus provide satisfaction as they are consumed" (p. 219, Rowland, Dodder, & Nichols, 1985). By examining family resources, researchers have been able to explain much of the variance in the relationship between children with disabilities and parental stress (Minnes, 1988). To illustrate, Minnes (1988) investigated 60 mothers of developmentally delayed children (Down's Syndrome and etiology unknown groups) from an outpatient clinic, to clarify the factors that influenced parental adjustment. With a thorough examination of parental stress, internal and external family resources, and child and parent characteristics, this researcher utilized stepwise linear regression to identify predictors of parental stress associated with a disabled child. Her results implied that family resources (family relations, social support, spiritual support,

mobilizing agency support, marital status, and socio-economic status) explained much of the variance between a child's disability and parental stress.

Similarly, other studies have measured the role of specific family resources as possible mediators of stress, to explain the influence of a child's disability on family functioning. For instance, higher levels of cohesion and expressiveness and lower levels of conflict (measured as family resource variables) have been demonstrated to buffer the effects of the child's disability on family outcomes such as maternal depression and anxiety (Kronenberger & Thompson, 1992). One component of family resources that has received the most empirical attention as a mediator of both parental stress and family functioning is social support. This construct comprises several components, including provision of instrumental aid (e.g. financial support), information and advice, and emotional support (Quittner & DiGirolamo, 1998). Often when families have children with developmental disabilities, they become socially isolated (Quittner & DiGirolamo, 1998), therefore they experience greater demands on their time and energy, with very little relief (Abelson, 1999). It is believed that a broad social support network, increases the availability of resources and buffers most detrimental effects on family functioning (Quittner & DiGirolamo, 1998; Pittman & Lloyd, 1988). For example, the availability of respite care has been shown to have positive effects on parental adjustment (Abelson, 1999). Gray and Holden (1992) discovered that those who received more social support reported lowered levels of depression, anxiety, and anger, and that social support alone was the most powerful predictor of these variables.

From these examples, it is clear that family resources play a significant role in how children with disabilities influence family functioning. However, it is also apparent

that the broad construct of family resources includes multiple sub-domains such as: human resources (time, health/energy, and skills), financial resources (money/credit), and environmental resources (interpersonal, community, and physical environment) (Rowland, et al, 1985). Having a child with a developmental disability strains these resources, which can influence the amount of time and energy invested in the marital relationship, thereby potentially negatively impacting marital satisfaction (Minnes, 1988).

Now that I have laid the basic foundation for relating family resources to family functioning, it is important to elucidate the two common approaches used to measure family resources as a potential moderating variable (Rowland, Dodder, and Nickol, 1985). The first approach is to utilize objective measures (e.g. data from demographic variables), and the second is to measure the perceptions of events (Rowland, et al, 1985). Lewin believed that behavior is the result of the interaction between the person and the environment, and that behavior is influenced by the subjective reality (perceptions) of the individual (Rowland, et al, 1985). This concept was examined by Campbell, Converse, and Rogers (1976) whose research indicated that a sense of well-being was more dependent on an individual's satisfaction with resources, as opposed to the quantity of said resources. In addition, Drotar and Bush (1985) noted that because perceptions are more strongly related to psychological distress and tend to be more predictive of family outcomes, objective measures of illness severity may not be as important as parents' appraisals of these circumstances.

To provide breadth and clarity to this idea that perceptions of resources influence family functioning, studies that employ this particular concept will now be reviewed. Herman and Thompson (1995) specifically examined families' perceptions of their

resources for caring for children with developmental disabilities. In their study, they looked at families enrolled in a Cash Subsidy Program, and inquired about their resources, use of services, and helpfulness of social supports. They found that parents assigned differential levels of adequacy to four resource domains: basic resources, money resources, time resources, and child related resources. Herman and Thompson (1995) stated that on average basic resources were usually adequate to meet basic needs, however money, time, and child related resources were rated as seldom to sometimes adequate. These authors went on to state that social support was related to the perceived adequacy of internal family resources in all domains. Specifically, the helpfulness of personal support networks (i.e. spouse, friends, and co-workers) or relatives were related to all types of internal resources. The helpfulness of child related supports (i.e. schools, physicians, and non-disabled siblings) demonstrated a moderating effect on the perceived adequacy of time designated for parents themselves, as opposed to time devoted to their children.

Continuing with the concept of how the perception of adequate resources relates to family functioning, Dyson (1997) compared thirty pairs of mothers and fathers of children with disabilities to parents of children without disabilities. She measured their perceptions of resources using the Questionnaire on Resources and Stress-Short Form. Also, she looked at the relationship characteristics within the family system using the Family Environment Scale. Finally, she evaluated the degree to which different sources of support were helpful to a family raising a young child, utilizing the Family Support Scale. The results indicated that there was a significant relationship between parental stress, family functioning, and family social support for parents of children with

disabilities. This same relationship was not identified in parents of non-disabled children. Dyson (1997) noted an important point stating that parental stress as perceived and experienced by parents of children with disabilities was related to their individual appraisals of overall family functioning. This research relates to the present study because it identifies a significant interrelationship among child factors, parent factors, and environmental factors that is consistent with the ecological-contextual model on which the present study is based. Furthermore, it provides additional support for the claim that families who have children with disabilities are at greater risk than families without disabled children for impaired family functioning.

In conclusion, because previous studies have noted a relationship between having a child with a disability and marital satisfaction, and have explained this relationship through elevations in parental stress, it was important to identify those factors contributing to increased stress levels within these systems. Following from this, family resources were identified as potential moderators of child's disability and family functioning, including marital satisfaction. This point was clarified in research studies that drew clear distinctions between objective measures of resources and subjective appraisals of those resources. Examples were then provided to illustrate how perceptions of family resources were predictive of aspects of family functioning. All of the information provided in this literature review served as the foundation on which the present study was developed.

#### *The Present Study*

The previous studies have contributed to how we have come to understand family processes as they relate to children with disabilities, marital satisfaction, and family

resources. A critique of most of the developmental disability research as it relates to marital satisfaction, is that they appear to be constrained by their methodologies (Hauser-Cram, et al, 2001, Quittner, & DiGirolamo, 1998). With few exceptions, these studies have been limited by univariate analyses, heterogeneous samples, and lack of continuous measures (Hauser-Cram, et, 2001; Quittner & DiGirolamo, 1998). Despite these constraints, these studies have helped to lay the foundation for a more ecological approach (Sweeney & Hoffman, 2004), that is necessary for conceptualizing the interactive influences on family functioning (Sontag, 1996). Without exploring family dynamics, especially the influences of developmental disability, the intricacies of such relationships could be ignored, and clear descriptions of the nature of those relationships will continue to be inadequate (Quittner, & DiGirolamo, 1998). The methodology of the present study explores a broader understanding of more complex relationships (including a moderating variable) that influence aspects of family functioning, informed by the ecological-contextual model (Sontag, 1996; Sweeney & Hoffman, 2004). Information gleaned from the literature presented above helped to shape the research questions of the present study, and the specific variables of interest. As stated earlier, to avoid some of the methodological limitations utilized by the previous research, the present study focused on one diagnostic category (autism) to avoid possible generalizations gleaned from heterogeneous samples (e.g. grouping several disabilities in one comparison group). It also utilized continuous, predictor (severity of autism and perceived adequacy of resources) and criterion (level of marital satisfaction) measures, rather than categorical comparison groups.

Keeping consistent with the goals of this study, three variables have been used to formulate specific hypotheses. The first two variables, the severity of autism and marital satisfaction, were analyzed together with a correlational/regression approach. The use of continuous measures allows for statistical freedoms (to identify predictive factors through regression analysis) that may not be afforded to similar studies with categorical data. The correlational/regression approach supports the exploration of moderators, taking into account more comprehensive family interactions. Severity of autism is important in this line of research because it helps to describe the nature of the relationship between it and marital satisfaction. As opposed to identifying that the two variables are associated with one another, directional relationships are implied, which is more meaningful when devising interventions and planning treatments (Hauser-Cram, et al, 2001). The second variable, marital satisfaction, is included because it is considered to be a viable family outcome factor that is specifically influenced by having a child with a developmental disability (Hauser-Cram, et al, 2001). Lowered marital satisfaction has been associated with impaired intrapsychic functioning of parents, and overall family adjustment (Hauser-Cram, et al, 2001).

The third variable included in this study is perceived adequacy of family resources. Though adequacy of family resources does not have a firmly established role as a mediator of severity of autism and marital satisfaction, there was some evidence that this may be a reasonable addition. Because most of the research that identified a relationship between severity of autism and marital satisfaction, indicated on some level, the role that stress plays throughout this interaction, mediators and moderators of parental stress (family resources) would be useful to explore in this manner. Research has shown

that the perceived adequacy of resources was not only influenced by having a child with a disability, but is also has been one of the strongest predictors of family functioning (Minnes, 1988).

With these established variables, three hypotheses were proposed. First, it was hypothesized that there was a negative correlation between a child's severity of autism and marital satisfaction: as autism severity increases, marital satisfaction tends to decrease. Second, it was hypothesized that a negative correlation existed between severity of autism and perceived adequacy of family resources: as severity of autism increased, the lower the perception of adequate resources. Finally, a moderational model was then proposed, suggesting that perceived adequacy of resources would explain the nature of the relationship between severity of autism and marital satisfaction by accounting for much of the variance within this relationship. Specifically, it was expected that severity of autism would have less of an impact on marital satisfaction, if one controlled for perceived adequacy of resources.

## Methods

### *Participants*

The participants in this study utilized the services of the University Center for Developmental Disability (UCDD) intervention program at California State University, San Bernardino. They were referred to this program from the Inland Regional Center (IRC), which is part of California's Department of Developmental Services. The IRC is a community-based, private, non-profit agency that assists families with case management and obtaining services and supports. The IRC currently serves the San Bernardino and Riverside County Areas, providing services to approximately 15,800 individuals (Department of Developmental Services, 2002).

Approximately 117 families participated, with children ranging from 3 to 17 years of age (31% under the age of six, 47% between seven and eleven, and 22% twelve years or older). Majority of the children who participate in this intervention program are male (approximately 80%). The demographic variables of the participants are comparable to that which is served by the Inland Regional Center. The ethnic breakdown of the participating families are as follows: African-American, 13%; Native American, 2%; Asian/Asian-American, 13%, Caucasian 35%; Hispanic/Latino, 18%; Pacific Islander, 4%; Other, 16%.

### *Procedures*

#### *Protection of Human Subjects*

Data were initially collected by the staff of UCDD, stored and locked in a file cabinet in a secure room. Names of subjects were only used for the purposes of matching data from family members, then the names were replaced with a five-digit code for all

inquiries of the research study. The present researcher had no access to any identifying information.

#### *Parent Data*

Parents who are currently enrolled in UCDD were invited to participate in the research aspects of the program. Parents who volunteered were asked to provide basic demographic information for their child, themselves, and for others in the family. After all demographic information was obtained, parents are then asked to complete a survey that includes all of the instruments to be utilized in the present study: the Gilliam Autism Rating Scale (GARS), the Dyadic Adjustment Scale (DAS), and the Perceived Adequacy of Resources Scale (PARS). The surveys were completed in either one, two-hour session, or two, one-hour session at the center itself. When parents arrived at the center for research, they were taken to a designated research area and asked to sit across from the examiner. At this point, they were given a pencil and an answer sheet, and were read a standardized set of instructions. Each question was read aloud to the participant by the examiner (to control for various reading levels), and the participant was asked to respond to the questions on the answer sheet in front of them. Responses were also facilitated by an 8.5" by 11" flip-book that was placed between the participant and the examiner. This book provided a clear delineation of all possible answers, while also serving as a barrier so that the parents would feel free to answer as truthfully as possible. If parents ask questions during administration, a canned response was given (e.g. "mark the answer that you believe is best."). When administration was complete, a set of standardized closing statements were then read to the participant.

## *Measures*

### *Perceived Adequacy of Resources Measures*

*Perceived Adequacy of Resources (PAR)*. Parents completed the PAR (Rowland, Dodder, & Nickols, 1985) to assess perceived adequacy of resources of the families who participated in the UCDD research program. It is a parsimonious and reliable, Likert-type scale with 28 items and measures the perceived adequacy of specific resources: physical environment, health/physical energy, time, financial, interpersonal, knowledge/ skills, and community resources. With seven sub-domains, a total score is provided. Internal consistency of the scale was high (Cronbach's alpha = 0.89), and items loaded as expected in seven resource categories.

### *Severity of Autism*

*The Gilliam Autism Rating Scale (GARS)*. Parents also completed the GARS (Gilliam, 1995) to assess the severity of autism of each of the children who participated in the UCDD program. The GARS is a norm-referenced measure that is designed for the assessment and diagnosis of autism and other similar severe behavioral disorders. It consists of 56-items, utilizing both Likert-type scales and true/false questions. The GARS consists of three subscales (stereotyped behaviors, communication, and developmental disturbances) and an overall score is also computed. The overall score is a percentile score ranging from 1-100, indicating the number of subjects that generally fall below that score. The higher the percentile score the more likely it is that child will not only have a diagnosis of autism, but it also indicates more severe levels of autism, as well. The GARS alpha coefficients range from .88 to .96 (Gilliam, 1995).

### *Marital Satisfaction*

*Dyadic Adjustment Scale (DAS)*. The DAS (Spanier, 1976) is a 32-item scale used to assess marital and relationship satisfaction in couples who live together. The questionnaire has four subscales: Satisfaction and Commitment; Expression, Affection and Sexuality; Consensus on Matters of Importance; Cohesion or Shared Activities. The total satisfaction score is derived by calculating the sum of the subscale scores, resulting in a total score that ranges from 0-150. Scores that fall below 101 are believed to reflect distressed individuals, while scoring above 102 are not (Prouty, Markowski, & Barnes, 2000). The reliability of the Cohesion subscale is reported to be .86 to .96 (Belsky, Spanier, & Rovine, 1983). With satisfactory validity, the DAS correlates well with scores of other measures of dyadic adjustment, like the Lock-Wallace Marital Adjustment Scale (Spanier, 1976).

### *Data Analysis*

A quantitative approach was used to examine the relationship between predictor, criterion, and potential moderating variables. The predictor variable for this study (severity of autism) was based upon the parent's rating of the child's behavior using the GARS, which is a continuous level of measurement. The criterion variable (marital satisfaction) was measured by the DAS, which is also a continuous measure. The moderating variable (perceived adequacy of resources) was based upon scores derived from the continuous PAR measure. Hierarchical regression analysis was used to test the moderating model. The total score of the severity of autism was entered first into the regression equation followed by the perceived adequacy of resources score. It was hypothesized that once the relationship between perceived adequacy of resources and

marital satisfaction was removed, the relationship between severity of autism and marital satisfaction would diminish significantly.

Hypothesis #1: Correlation Analysis

Hypothesis #2: Correlation Analysis

Hypothesis # 3: Hierarchical Multiple Regression Analysis

## Results

### *Initial Screening of the Data: Meeting Assumptions*

Data obtained from the sample were screened to check the integrity of statistical assumptions prior to data analysis. Means and standard deviations for each variable are presented in Table 1 to depict the distribution of each variable adequately.

Table 1  
*Screening*

	Total Dyadic Adjustment (DAS)	Total Resources (PAR)	Autism Quotient (GARS)
Mean	48.69	126.63	94.23
Median	50	126	94
Mode	51	126	88
Standard Deviation	10.77	25.86	11.83
Minimum	20	47	65
Maximum	69	191	135
Cronbach Alphas	.93	.67	.76

### *Normality*

Each of the predictors and criterion variables were screened for normality using histograms with a superimposed normal curve. The four variables: the severity of autism (Appendix B), marital satisfaction (Appendix C), perceived adequacy of resources (Appendix D), and the interaction term for severity of autism and adequacy of resources (Appendix E) all approximated normal. Because the histograms show that each variable approximated normal distributions, the assumption of normality has been met.

### *Outliers*

The standard by which an outlier was defined in the present study was any score greater than 3.5 standard deviations from the mean. There were no scores that fell outside 3.5 standard deviations from the mean, as a result none were removed.

### *Homoscedasticity of Variance*

To depict visually the homoscedasticity of the variance, individual scatterplots were against the criterion (Appendices F, G, & H). The scatterplots depict a relatively uniform and equal variance for all three predictor variables, GARS, PAR, and the interaction term.

### *Linearity*

In order to represent linearity, scatterplots were performed to reflect the bivariate relationship among variables (Appendices F, G, & H). As can be seen in the scatter plots, the correlations among the variables approximate a relatively straight line. The variables were significantly correlated with one another, and therefore met the assumptions to analyze these variables in a moderational relationship. This permitted the exploration of the moderating model.

### *Correlations*

Pearson  $r$  correlations were analyzed for the variables in the study to examine the relationships among each (Table 2). The analysis indicated that each of the variables are closely related to one another. Overall, the GARS, PAR, and the DAS appear to be measuring distinct variables, and based on the correlations there does not appear to be any threat to multicollinearity. The correlations suggest that each of the predictor variables (the severity of autism, the adequacy of resources, as well as their interaction term) have the potential to account for variance within the criterion (marital satisfaction).

Table 2

*Pearson r Correlations*

	Total Dyadic Adjustment	Autism Quotient	PAR Total Resources
Total Dyadic Adjustment	1	--	--
Autism Quotient	-.201*	1	
PAR Total Resources	.298**	-.254**	1

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

\* Correlation significant at the .05 level (2-tailed).

*Assessment of Scale Reliability*

For this sample, Cronbach alphas were analyzed for each measure to determine the internal consistency of the items within each scale, particularly how they relate to each measure's published internal consistency (Table 1). The alpha for the DAS (.93) suggests good reliability and is comparable with the alphas established in the initial standardization of the measure (Spanier, 1976). The alpha coefficients for the GARS (.67) and PAR (.76) fall just below expected ranges when compared to the published standardizations (Gilliam, 1995; Rowland, Dodder, & Nickols, 1985); however, each measure demonstrated adequate internal consistency.

*Tests of the Hypotheses**Hypothesis #1*

It was hypothesized that there would be a negative correlational relationship between severity of autism and marital satisfaction. The severity of autism as measured by the GARS was significantly correlated with marital satisfaction as measured by the DAS ( $r = -.201$ ,  $p = .03$ ). This result supports the hypothesis that as severity of autism increases, marital satisfaction tends to decrease. Based upon this analysis, severity of

autism may serve as a predictor of lowered marital satisfaction in a regression model testing for moderating factors of this relationship.

*Hypothesis #2.*

It was hypothesized that a negative correlational relationship existed among severity of autism and perceived adequacy of resources. The severity of autism as measured by the GARS was significantly correlated with the perceived adequacy of resources as measured by the PAR ( $r=-.254$ ,  $p<.01$ ), providing statistical support for this hypothesis. The negative direction of the correlation also supports the proposed hypothesis. This statistic also supports perceived adequacy of resources as a possible predictor for marital distress in a regression model, exploring moderating factors of the relationship among severity of autism and marital satisfaction

*Hypothesis #3*

If hypotheses 1 and 2 were discovered to be meaningful, it was hypothesized that perceived adequacy of resources would exhibit a moderating effect on the relationship between severity of autism and marital satisfaction. Hierarchical multiple regression was conducted to investigate the potential moderating role of the perceived adequacy of resources on the relationship between severity of autism and marital satisfaction. Prior to entry into the regression model, all continuous variables were standardized in order to reduce multicollinearity. The product of the standardized scores for severity of autism and perceived adequacy of resources was used to derive the interaction term (West, Aiken & Krull, 1996). The autism quotient was entered in Step 1 and accounted for 4 percent of the variance in marital satisfaction ( $F(1,115) = 4.8$ ,  $p=.03$ ). This indicates a small, but significant main effect. Step 2 added the perceived adequacy of resources

variable, accounting for 4.8 percent of the variance in marital satisfaction above and beyond the previous equation ( $\Delta R^2=.05$ ,  $F$  for  $\Delta R^2= (1,114)=5.48$ ,  $p=.02$ ). This also indicates a small, but significant main effect. In Step 3, the interaction term was added, accounting for 2.8 percent of the variance above and beyond the previous equation, which was not statistically significant ( $R^2=.116$ ,  $\Delta R^2=.03$ ,  $F$  for  $\Delta R^2= (1,113)=4.92$ ,  $p=.06$ ). Table 2 represents the values for the full regression model after all variables were entered. Though the interaction term was not significant, it seemed to have a small suppressor effect in that it improved the predictive strength of the two main effects as it entered the third block. The interaction term's contribution to the total regression equation falls just short of the other two predictors, which were statistically significant.

Table 3

*Hierarchical Regression*

	$R^2$	$\Delta R^2$	B	SE B	$\beta$	t	p
Step 1							
Autism Quotient	.04	.04*	-.185	.084	-.200	-2.191	.030
Step 2							
Autism Quotient + Total Perceived Adequacy of Resources	.088	.048 *	-.138 .104	.085 .042	-.150 .224	-1.630 2.441	.106 .016
Step 3							
Interaction term between Autism Quotient and Total Perceived Adequacy of Resources	.116	.028	-.174 .117 2.261	.086 .043 1.20	-.189 .252 .175	-.2025 2.738 1.883	.045 .007 .062

\*Statistically Significant

## Discussion

The goal of the present study was to expand on the existing literature exploring families with children who have developmental disabilities, particularly autism. After a thorough review of the literature, it had been discovered that previous studies have been constrained by univariate approaches that failed to adequately capture the nuances of family functioning. Therefore, the current project attempted to improve on previous research designs to gain a better understanding of how families who have children with developmental disabilities function. There are two ways in which the present study differed in approach and design from past research. First, it utilized the ecological/contextual theory in a manner similar to the UCDD research program (Sweeney & Hoffman, 2004), to conceptualize interrelationships among family members and explore how contextual factors may influence those relationships. In the case of the present study, interrelationships were examined by exploring the influence of children with autism on their parents' marital relationship, and noting whether adequacy of resources as a contextual factor, reduced the negative influence of autism on marital satisfaction. Another way in which the present study was different from previous research, was in its use of continuous measures of these three variables. Using these continuous measures allowed the researchers to analyze the nature of the relationship between severity of autism and marital satisfaction, and to determine whether adequacy of resources serves as a moderator within this relationship. The use of continuous measures is consistent with the model articulated by Sweeney and Hoffman (2004), and allowed the current researchers to conduct more sophisticated statistical analyses, such as hierarchical multiple regression. In doing so, we were able to examine the

interrelationships among severity of autism, marital satisfaction, and adequacy of resources. These points will be clarified as we review and discuss the findings of the present study.

### *A Priori Analyses*

#### *Hypothesis #1*

The first hypothesis stated that severity of autism would be negatively correlated with marital satisfaction. The results indicated that there was indeed a statistically significant negative relationship between these two variables, supporting the first hypothesis. This finding was expected because of the work conducted by Quittner and DiGirolamo (1998), who suggested that having a child with a serious, chronic illness tended to increase problems with communication and intimacy. As a result, parents experienced lowered overall marital satisfaction when compared to parents of children without serious, chronic illnesses. Recognizing the limitations of univariate approaches, Quittner and DiGirolamo (1998) emphasized the importance of moving beyond identifying the association between autism and marital adjustment, and encouraged more theory-driven research with broader assessment tools to clearly explain the nature of such a relationship, as addressed here.

This result also replicates the findings of Jesser's (2002) preliminary study, which revealed that severity of autistic behavior had deleterious effects on overall marital adjustment. She too emphasized the importance of using continuous measures to help explain the nature of that relationship. Jesser's (2002) research, served as a pilot for the present study, and reflects a progression in both research design and methodology. For instance, Quittner and DiGirolamo (1998) recognized that having a child with autism is

related to marital satisfaction, then Jessor (2002) and the present study discovered that severity of autistic behavior negatively influenced the level of overall marital adjustment. Based on these findings, it was incumbent on the present study to build on these results and examine more specific factors, which may better explain this relationship. This leads to the second hypothesis of the present study.

### *Hypothesis #2*

It was hypothesized that there would be a negative correlation between severity of autism and parents' perceptions of adequate resources. This was expected because of previous studies that have provided evidence in support of this claim (Minnes, 1998; Quittner & DiGirolamo, 1998; Pittman & Lloyd, 1988). The results of the present study not only echoed past findings, but further suggested that the more severe a child's autistic behavior, the more likely parents were to perceive themselves as having fewer adequate resources available to them. More specifically, parents believed that they had less time, financial means, health and physical energy, community support, physical space, and interpersonal resources, as measured by the PAR.

The results of the present study, provided evidence that contextual factors, such as the availability of adequate resources may be influenced by the severity of a child's developmental disability. Other researchers have suggested that having limited resources puts inordinate strain on the family system, and has implications for overall family functioning (Minnes, 1998; Quittner & DiGirolamo, 1998; Pittman & Lloyd, 1988). Therefore, it was possible to utilize resources as a means of explaining how severity of autism influenced overall family functioning, particularly marital satisfaction. This led to the third hypothesis of the present study.

### *Hypothesis #3*

Finally, based on the above-mentioned significant relationships, a third hypothesis was tested examining the role of the perceived adequacy of resources as a possible moderator of the demonstrated relationship between severity of autism and parental marital satisfaction. As reviewed previously, the literature indicated that families who have children with developmental disabilities experience having fewer adequate resources, which researchers speculated placed inordinate strain on the family system, and ultimately impaired overall family functioning, including marital adjustment (Minnes, 1998; Quittner & DiGirolamo, 1998; Pittman & Lloyd, 1988). The results of the present study revealed that adequacy of resources did not account for a significant proportion of the variance in the relationship between severity of autism and marital satisfaction, and thus did not function as a moderating variable.

There are several possible explanations for why this hypothesis was not supported in the present study. First, the use of overall scores from the various measures (the GARS, the DAS, and the PAR), may have been insufficient to identify accurate predictors within the regression model. Because of the complex nature of both severity of autism and adequacy of resources, it may have been necessary to explore more specific components of the constructs to understand the nature of such a relationship. As mentioned earlier, children with autism are often limited by inherent, biological factors called *developmentally instigative* characteristics that make it difficult for them to relate to others (Sontag, 1996). Consequently, these characteristics also make it difficult for others to relate to them, as some children exhibit behaviors that are very difficult to manage (Sontag, 1996). These characteristics are particularly evident in the child's social

interaction skills, which impact non-verbal social behavior, empathy, and reciprocity (Kronenberger & Meyer, 2001). These factors relate to the findings of the present study, which revealed that limited social interaction skills were more closely related to marital satisfaction than other facets of the disability (see Appendix A-1). This may mean that a child's inability to relate appropriately to others has an influence not only on the parent/child relationship, but on marital adjustment, as well. The social interaction subscale of the GARS appeared to have the only significant relationship with marital satisfaction, and thus may have served as a better predictor within a regression model.

Similarly, it may have been necessary to identify specific family resources, which may buffer autism's influence on marital adjustment. For example, one of the subscales of the PAR was health and physical energy, which appeared to be more significantly related to marital adjustment than other resources measured by this scale (see Appendix A-3). The results of the present study suggested that if parents believed themselves to be healthier with more physical energy, they were more likely to experience better marital relationships. This finding supports the research in the parenting literature reviewed earlier, which suggested that parents tended to allocate their energy resources toward their children, which left very little to invest in the marital relationship (Levy-Shiff, 1994). As a result, many parents often experienced a decline in marital satisfaction (Levy-Shiff, 1994). Though the past research finding was not specific to the developmental disability domain, the results of the present study suggest that health and physical energy may be an important factor when predicting marital adjustment. Therefore, it may be possible to explore how having a child with a developmental disability specifically impacts parents' overall health and physical energy, which has

been demonstrated to be positively correlated with marital adjustment. Health and physical energy may have served as a more specific moderator between the relationship of severity of autism and marital satisfaction, as opposed to adequacy of total resources.

#### *Implications and Future Research*

Despite the lack of support for the moderating model proposed in the present study, its implications can be evaluated in light of the ecological/contextual model on which it is based (Sweeney & Hoffman, 2004). As the results demonstrated, the severity of a child's autistic behavior tended to decrease parents' appraisals of their marital relationship. The current researchers attempted to demonstrate the role of contextual factors, such as adequacy of family resources, to explain the interrelationships among family members, which is also in line with this theoretical perspective. However, because this model was not supported by the results, the nature of the relationship between severity of autism and marital satisfaction remains unclear. There is still a limited understanding of what it is about parenting a child with special needs that influence parents' relationships with one another. The use of the ecological-contextual theory is encouraged because it not only provides a possible means for understanding family functioning, but it also provides a strategy for incorporating treatment plans and interventions as contextual factors, as well. Because of the unique nature of autism, with its *developmentally instigative* characteristics, typical intervention strategies may be less useful within this population. The ecological-contextual model does not target just child characteristics or parent characteristics to promote change in the family, instead it allows for the exploration of other environmental factors that could buffer the effect that one has on the other. In other words, once we gain a better understanding of how parenting a

child with special needs taxes the marital relationship, specific interventions may be developed to help ameliorate this effect.

Future researchers can continue the work of the present study in one of several ways. First, in addition to using more specific predictors of marital satisfaction using the PAR scale, future researchers could also explore alternative measures of the family resources construct. As reviewed in the literature, previous studies have used a wide range of tools to assess adequacy of family resources. A different measure may be more sensitive to the changes in family characteristics including severity of autism and level of marital satisfaction. By changing the measure to increase specificity and sensitivity, one may find evidence to support the moderating model proposed in the present study.

Another useful exploration for future studies would be an outcome assessment that looks at the specific services and interventions provided within programs such as UCDD. In doing so, one may examine the utility of certain intervention strategies in improving marital satisfaction over time. Specifically, would parents who participate in these programs experience improvements in their marital relationships? This type of outcome assessment could provide evidence that having access to community resources and being exposed to specific treatment interventions minimizes the negative influence of parenting a child with a developmental disability on the marital relationship.

This area of research is important because lowered marital satisfaction has implications for overall family functioning such as increased parental conflict, decreased positive attention to children, negative parent self-perceptions (i.e., depression), and increased likelihood of divorce (Rickard, Forehand, Atkeson, & Lopez, 1982). For these

reasons, further research is warranted to elucidate our understanding of the influence that children with developmental disabilities have on overall family functioning.

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Appendix A-1  
Pearson *r* Correlations GARS and DAS

	Pearson Correlation	Stereotyped Behavior standard score	Communication standard score	Social Interaction standard score	Developmental Disturbances standard score	Autism Quotient	DAS Dyadic Consensus	DAS Dyadic Satisfaction	DAS Dyadic Expression	DAS Dyadic Cohesion	DAS Total Dyadic Adjustment
Stereotyped Behavior standard score		1									
Communication standard score	Sig. (2-tailed) Pearson Correlation	.334(**)	1								
Social Interaction standard score	Sig. (2-tailed) Pearson Correlation	.001 .528(**)	.519(**)	1							
Developmental Disturbances standard score	Sig. (2-tailed) Pearson Correlation	.000 .104	.000 .083	.236(**)	1						
Autism Quotient	Sig. (2-tailed) Pearson Correlation	.207 .712(**)	.404 .719(**)	.004 .809(**)	.554(**)	1					
DAS Dyadic Consensus	Sig. (2-tailed) Pearson Correlation	.000 .004	.000 -.002	.000 -.174	.000 -.029	.000 -.078	1				
DAS Dyadic Satisfaction	Sig. (2-tailed) Pearson Correlation	.967 -.153	.983 -.080	.058 -.259(**)	.758 -.001	.390 -.192(*)	.721(**)	1			
DAS Dyadic Expression	Sig. (2-tailed) Pearson Correlation	.093 -.076	.471 -.070	.004 -.166	.995 -.074	.035 -.148	.000 .683(**)	.611(**)	1		
DAS Dyadic Cohesion	Sig. (2-tailed) Pearson Correlation	.396 -.140	.511 -.008	.064 -.215(*)	.411 -.135	.095 -.200(*)	.000 .597(**)	.000 .548(**)	1		
DAS Total Dyadic Adjustment	Sig. (2-tailed) Pearson Correlation	.118 -.064	.944 -.125	.016 -.258(**)	.134 -.090	.024 -.201(*)	.000 .912(**)	.000 .892(**)	.000 .770(**)	.764(**)	1
	Sig. (2-tailed)	.488	.258	.005	.336	.028	.000	.000	.000	.000	.000

\*\* Correlation is significant at the 0.01 level (2-tailed)  
\* Correlation is significant at the 0.05 level (2-tailed)

Appendix A-2  
Pearson *r* Correlation for GARS and PAR

	Pearson Correlation	Sig. (2-tailed)	Stereotyped Behavior	Communication	Social Interaction	Developmental Disturbances	Autism Quotient	PAR Physical Environment Resources	PAR Health Physical Energy Resources	PAR Time Resources	PAR Financial Resources	PAR Interpersonal Resources	PAR Knowledge Skill Resources	PAR Community Resources	PAR Total Resources
Stereotyped Behavior standard score			1												
Communication standard score			.334(**)	1											
Social Interaction standard score			.526(**)	.000	1										
Developmental Disturbances standard score			.104	.083	.236(**)	1									
Autism Quotient			.207	.404	.004										
PAR Physical Environment Resources			.712(**)	.719(**)	.809(**)	.554(**)	1								
PAR Health Physical Energy Resources			.000	.000	.000	.000									
PAR Time Resources			.223(**)	.087	-.150	-.118	-.180(*)	1							
PAR Financial Resources			.006	.378	.065	.148	.026								
PAR Interpersonal Resources			-.079	.020	-.101	-.055	-.094	.278(**)	1						
PAR Knowledge Skill Resources			.329	.843	.219	.502	.244	.000							
PAR Community Resources			-.093	-.039	-.118	-.052	-.104	.328(**)	.595(**)	1					
PAR Total Resources			.255	.691	.150	.527	.200	.000	.000	.478(**)	1				
Stereotyped Behavior standard score			-.196(*)	-.070	-.153	-.169(*)	.216(**)	.478(**)	.449(**)	.000	.478(**)	1			
Communication standard score			.015	.475	.061	.038	.007	.000	.000	.000	.000	.000	1		
Social Interaction standard score			-.257(**)	-.164	-.182(*)	-.155	.263(**)	.320(**)	.445(**)	.445(**)	.475(**)	.493(**)	.343(**)	1	
Developmental Disturbances standard score			.001	.095	.025	.058	.001	.000	.000	.000	.000	.000	.000	.000	1
Autism Quotient			-.157	-.013	-.153	-.040	-.141	.276(**)	.414(**)	.415(**)	.468(**)	.278(**)	.629(**)	.712(**)	.000
PAR Physical Environment Resources			.055	.897	.063	.625	.084	.000	.000	.000	.000	.000	.000	.000	.000
PAR Health Physical Energy Resources			-.112	-.110	-.165(*)	-.135	-.188(*)	.327(**)	.460(**)	.470(**)	.503(**)	.493(**)	.343(**)	.712(**)	.000
PAR Time Resources			.169	.265	.042	.097	.019	.000	.000	.000	.000	.000	.000	.000	.000
PAR Financial Resources			-.235(**)	-.062	-.203(*)	-.173(*)	.254(**)	.612(**)	.726(**)	.754(**)	.807(**)	.697(**)	.629(**)	.712(**)	.000
PAR Interpersonal Resources			.004	.530	.013	.035	.002	.000	.000	.000	.000	.000	.000	.000	.000

\*\* Correlation is significant at the 0.01 level (2-tailed)  
\* Correlation is significant at the 0.05 level (2-tailed)

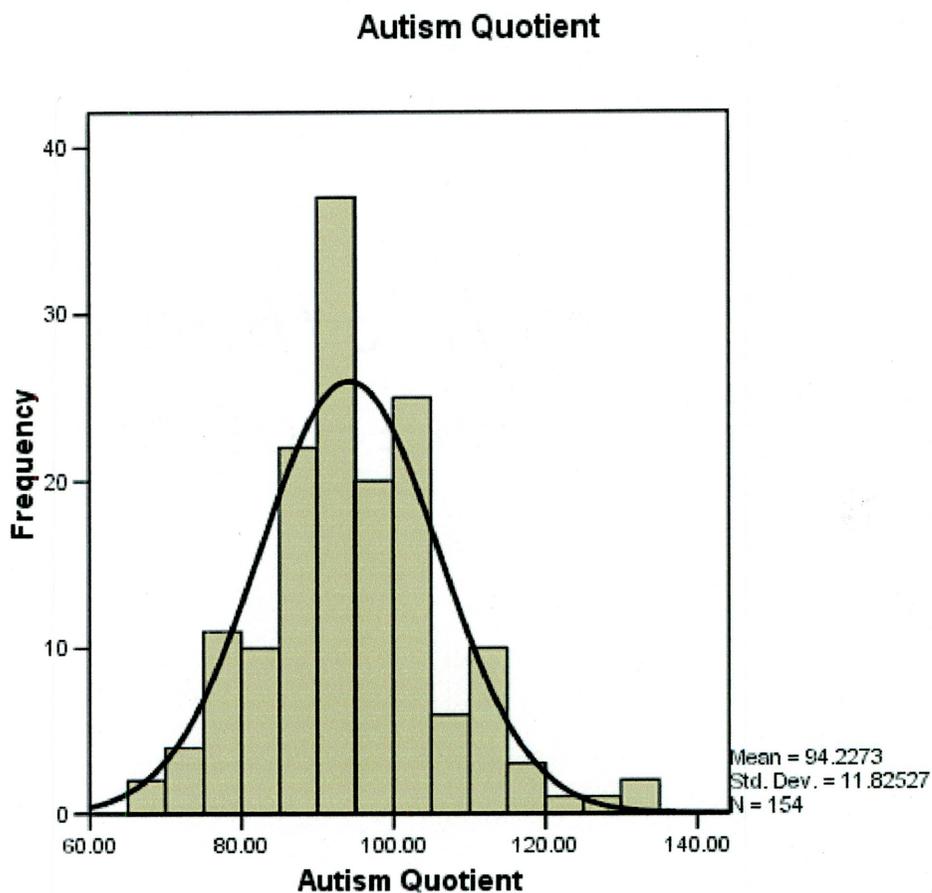
Appendix A-3  
Pearson r Correlations PAR and GARS

	PAR Time Resources	PAR Financial Resources	PAR Interpersonal Resources	PAR Knowledge Skill Resources	PAR Community Resources	PAR Total Resources	PAR Physical Environment Resources	PAR Health Physical Energy Resources	DAS Dyadic Consensus	DAS Dyadic Satisfaction	DAS Dyadic Expression	DAS Dyadic Cohesion	DAS Total Dyadic Adjustment
PAR Time Resources	1												
PAR Financial Resources	Pearson Correlation Sig. (2-tailed)	1											
PAR Interpersonal Resources	Pearson Correlation Sig. (2-tailed)	.478(**)	1										
PAR Knowledge Skill Resources	Pearson Correlation Sig. (2-tailed)	.445(**)	.475(**)	1									
PAR Community Resources	Pearson Correlation Sig. (2-tailed)	.415(**)	.468(**)	.278(**)	1								
PAR Total Resources	Pearson Correlation Sig. (2-tailed)	.470(**)	.503(**)	.493(**)	.343(**)	1							
PAR Physical Environment Resources	Pearson Correlation Sig. (2-tailed)	.754(**)	.807(**)	.697(**)	.629(**)	.712(**)	1						
PAR Health Physical Energy Resources	Pearson Correlation Sig. (2-tailed)	.595(**)	.449(**)	.445(**)	.414(**)	.726(**)	.278(**)	1					
DAS Dyadic Consensus	Pearson Correlation Sig. (2-tailed)	.347(**)	.156	.155	.303(**)	.298(**)	-.012	.377(**)	1				
DAS Dyadic Satisfaction	Pearson Correlation Sig. (2-tailed)	.128	.098	.316	.010	.044	.725	.005	.721(**)	1			
DAS Dyadic Expression	Pearson Correlation Sig. (2-tailed)	.208(*)	.095	.149	.154	.164	-.077	.360(**)	.683(**)	.611(**)	1		
DAS Dyadic Cohesion	Pearson Correlation Sig. (2-tailed)	.014	.266	.080	.072	.054	.369	.000	.000	.000	.546(**)	1	
DAS Total Dyadic Adjustment	Pearson Correlation Sig. (2-tailed)	.290(**)	.209(*)	.233(**)	.267(**)	.298(**)	-.027	.337(**)	.912(**)	.892(**)	.770(**)	.764(**)	1
		.001	.018	.008	.002	.407	.759	.000	.000	.000	.000	.000	.000

\*\* Correlation is significant at the 0.01 level (2-tailed)  
\* Correlation is significant at the 0.05 level (2-tailed)

Appendix B

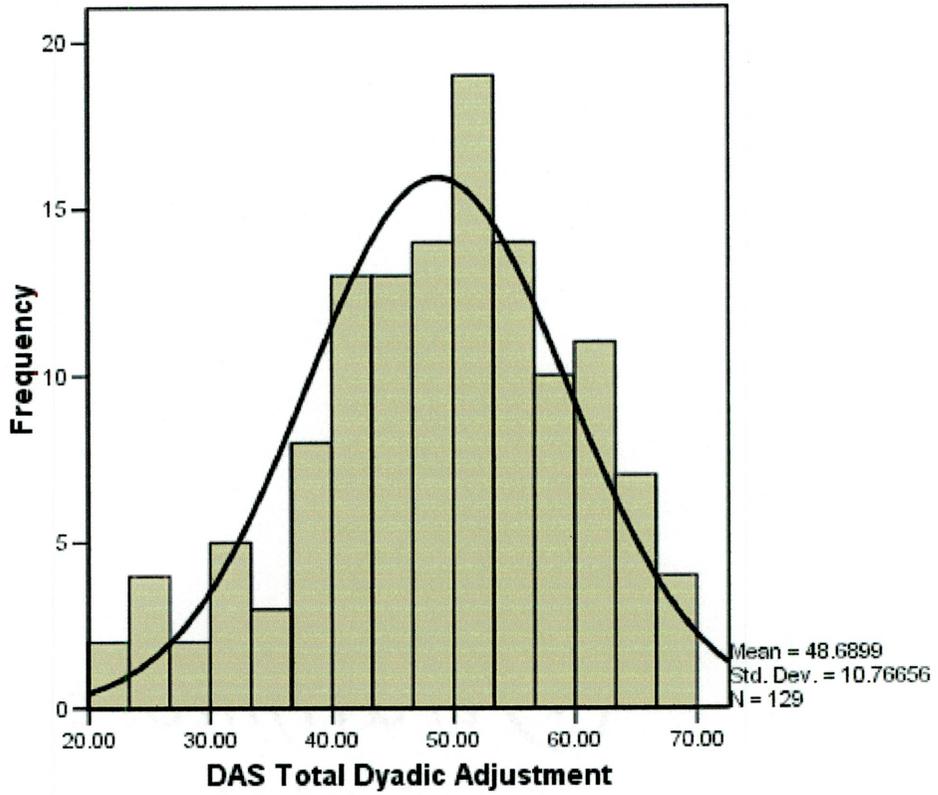
*Frequency Distribution for Severity of Autism*



Appendix C

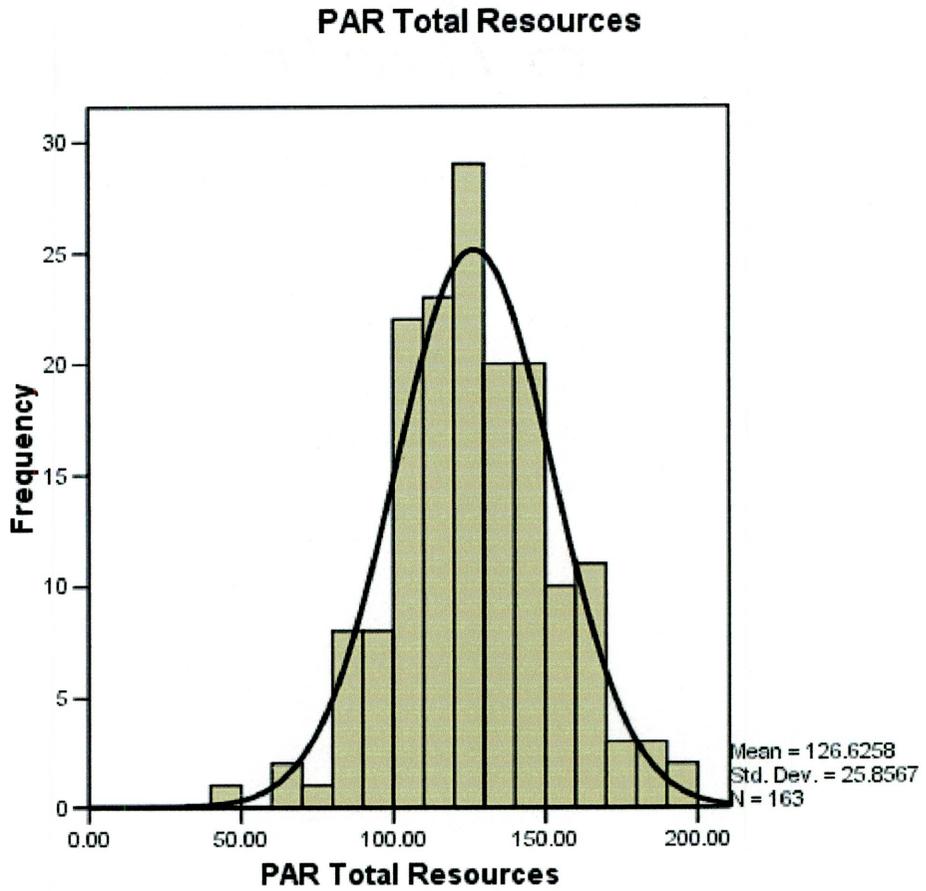
*Frequency Distribution for Marital Satisfaction*

**DAS Total Dyadic Adjustment**



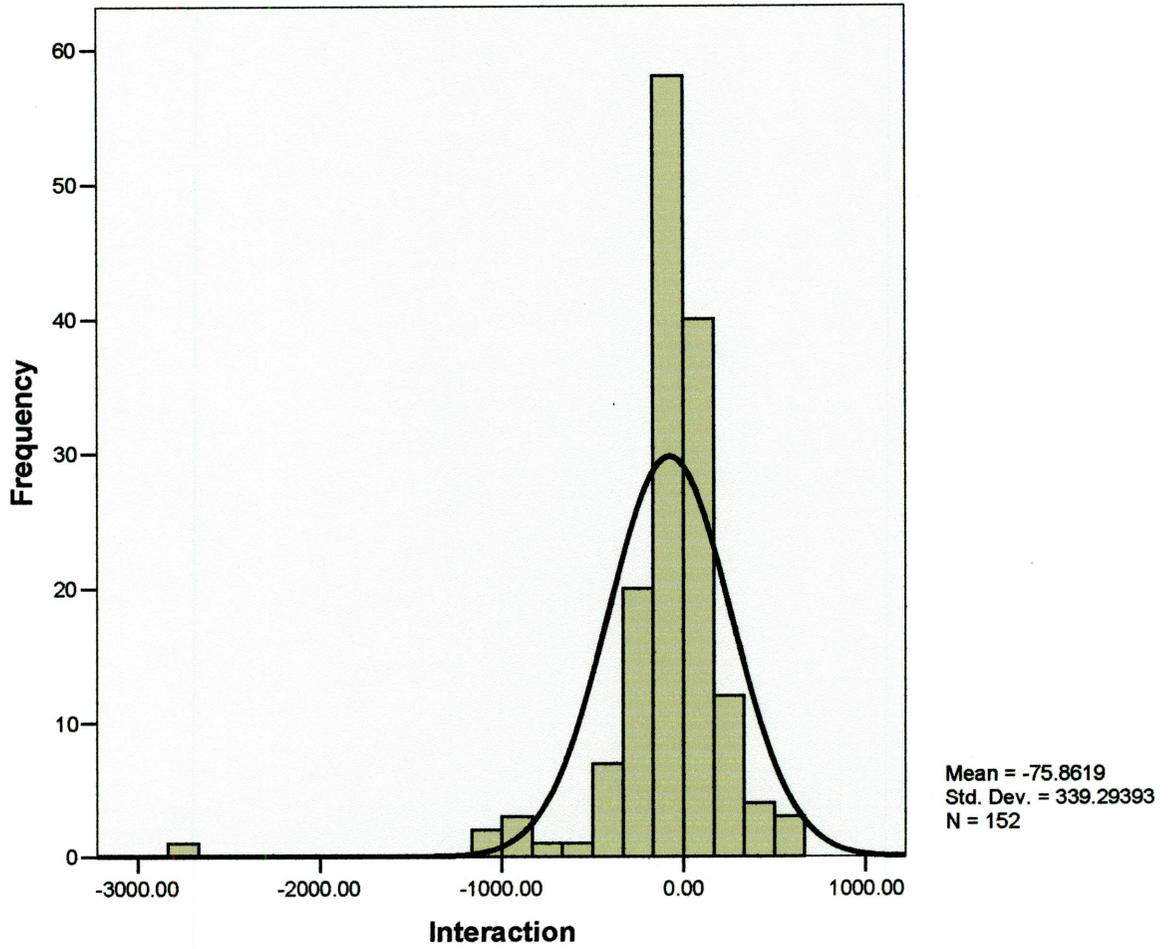
Appendix D

*Frequency Distribution for Perceived Adequacy of Resources*



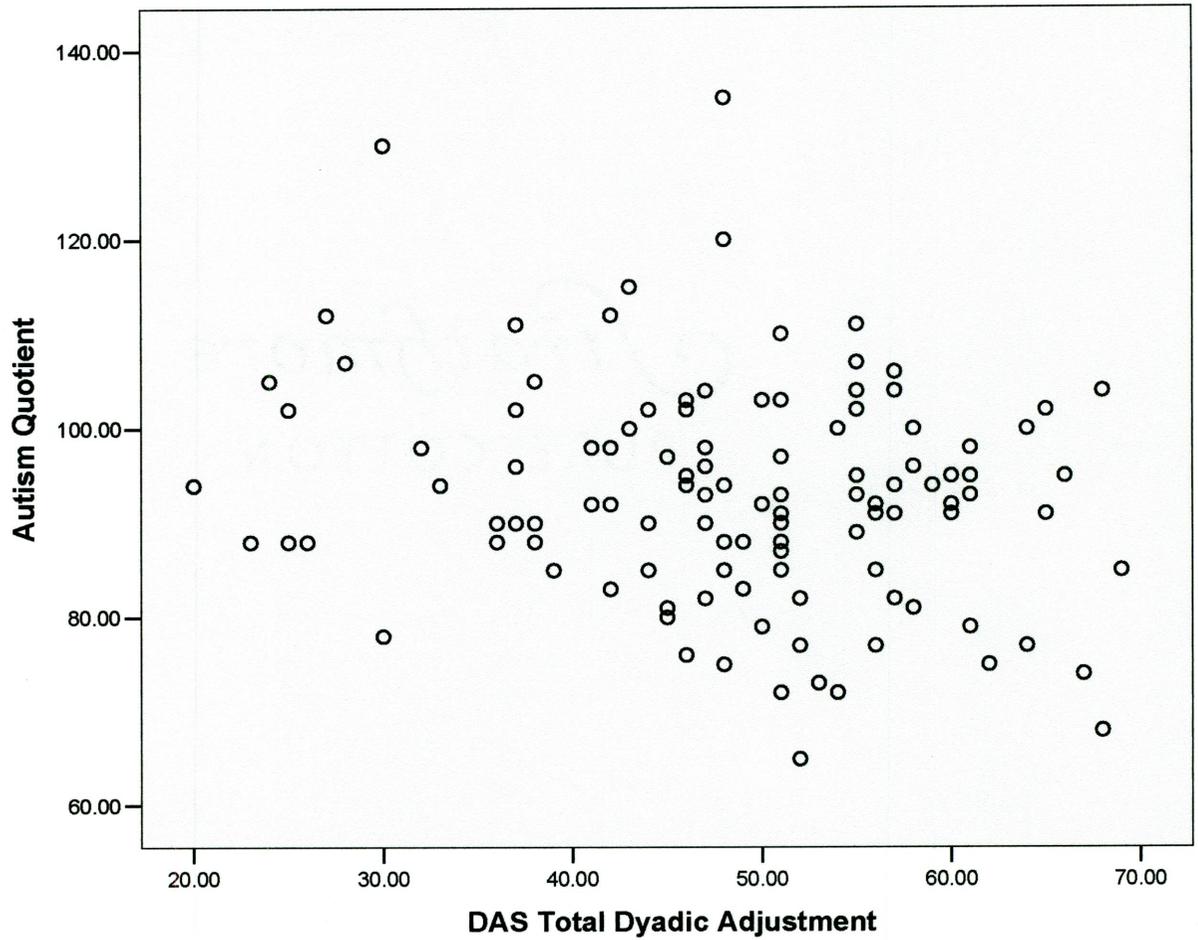
Appendix E

*Frequency Distribution of the Interaction Term (GARSxPAR)*



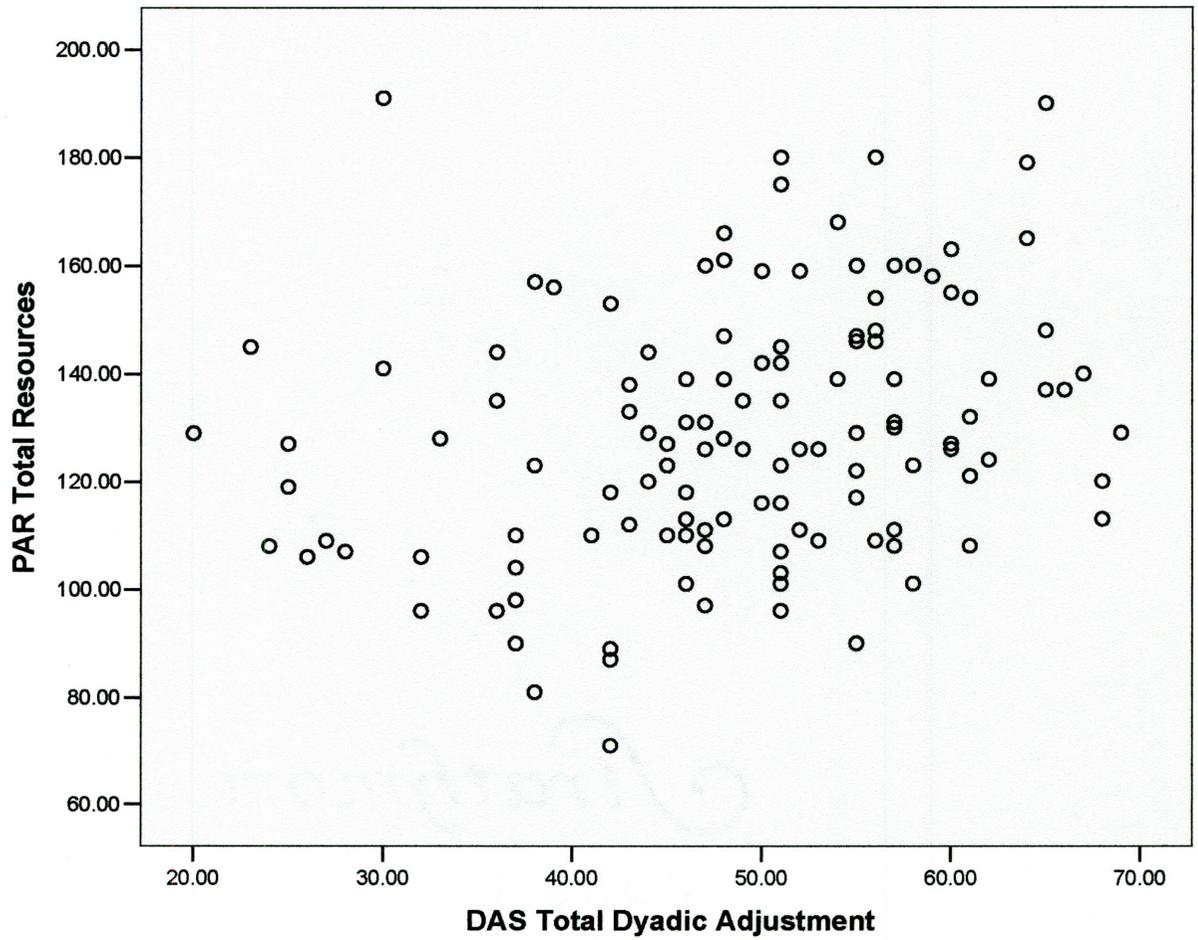
Appendix F

*Scatter for the GARS (predictor 1) against DAS (criterion)*



Appendix G

*Scatter for the PAR (predictor 2) against DAS (criterion)*



Appendix H

*Scatter for the Total Regression Model*

**Scatterplot**

**Dependent Variable: DAS Total Dyadic Adjustment**

