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Asperger's Syndrome/Autism Spectrum Disorder and Marital Satisfaction: A Quantitative Study

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Running head: ASPERGER/NEUROTYPICAL MARITAL SATISFACTION

Asperger's Syndrome/Autism Spectrum Disorder and Marital Satisfaction:

A Quantitative Study

by

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DISSERTATION

Submitted in partial fulfillment for the degree of
Doctor of Psychology in the Department of Clinical Psychology
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Keene, New Hampshire



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DISSERTATION COMMITTEE PAGE

The undersigned have examined the dissertation entitled:

**ASPERGER'S SYNDROME/AUTISM SPECTRUM DISORDER AND
MARITAL SATISFACTION: A QUANTITATIVE STUDY**

presented on July 6, 2015

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Dedication

To Rick, for everything.

To my beautiful, wise, sensitive, difficult, feisty, and beloved mother. Thanks for waiting.

Thus, a strain of gentle music, or the rippling of water in a silent place, or the odour of a flower, or the mention of a familiar word, will sometimes call up sudden dim remembrances of scenes that never were, in this life; which vanish like a breath; which some brief memory of a happier existence long gone by would seem to have awakened; which no voluntary exertion of the mind can ever recall.

— *Oliver Twist*, Charles Dickens

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Abstract

Few empirical studies exist that examine adult Asperger-affected relationships. The purpose of this study was to determine whether the marital satisfaction of individuals in relationships in which at least one partner has Asperger's Syndrome (AS) or Autism Spectrum Disorder (ASD), differs in some significant way from the marital satisfaction of individuals in relationships in which neither partner has AS/ASD. Participants were 126 adults in relationships in which at least one partner had a diagnosis of AS or ASD, recruited from Asperger- and autism-related websites, social media, and organizations from English-speaking countries. Couples consisted of heterosexual and same-sex couples, couples with and without children, and couples in which either the male and/or the female partner had an AS/ASD diagnosis. Members of each couple responded independently. Using an online version of the Marital Satisfaction Inventory, Revised (MSI-R), the mean scores of individuals in AS/ASD-affected relationships were compared with the normative data of the MSI-R for males and females on each of 10 dimensions of marital satisfaction, resulting in 20 comparisons. The dimensions of marital satisfaction included global distress, affective communication, problem solving communication, time together, aggression, sexual dissatisfaction, disagreement about finances, family history of distress, dissatisfaction with children, and conflict over child rearing. Comparisons were made using independent samples t-tests. Because of the highly significant results, step-down procedures were not needed to correct for possible inflation of Type 1 errors. Of the 20 comparisons, 15 demonstrated significantly more dissatisfaction among individuals in AS/ASD-affected relationships than those from the normative data sample, at $p < .001$. In all cases, individuals in AS/ASD-affected partnerships were more dissatisfied than their normative sample counterparts. Separate analyses revealed that NT individuals were less satisfied than their AS/ASD partners. Women reported

higher levels of sexual dissatisfaction than men. Findings of lower marital satisfaction for AS/ASD-affected relationships replicate those of a similar, prior study, but differ from two other studies that found no difference in marital satisfaction related to partner AS/ASD status. Future research, clinical implications, and alternatives to traditional couples counseling are discussed.

Keywords: Asperger's Syndrome, Asperger's Disorder, autism, Autism Spectrum Disorder, marital satisfaction, couple, relationship, MSI, MSI-R

Asperger's Syndrome/Autism Spectrum Disorder and Marital Satisfaction:

A Quantitative Study

What is known about romantic relationships in which one or more partners have Asperger's Syndrome or Autism Spectrum Disorder? What are some of the common challenges that such couples may face? Do such relationships have strengths relative to so-called neurotypical relationships? The following study was designed to investigate the marital satisfaction of individuals in intimate relationships in which at least one partner in the relationship has been diagnosed with Asperger's Syndrome or Autism Spectrum Disorder.

Background

Asperger's Syndrome. Asperger's Syndrome (AS), a developmental disability characterized by social impairments and repetitive or restricted interests or behaviors (e.g., American Psychiatric Association, 1994), is a neurological disorder considered to be part of the autism spectrum. AS is differentiated from other forms of autism primarily by the intact cognitive processes that AS individuals possess.

As has been well-documented, AS is named after the Austrian pediatrician, Hans Asperger. In 1944, Asperger recorded a pattern of characteristics among a group of boys with whom he was working, who were weak in nonverbal communication skills and their ability to empathize with others. The term "Asperger Syndrome" was introduced to the English speaking public by Lorna Wing (1981) in her classic paper.

Included only in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders in 1994 (DSM-IV; American Psychiatric Association, 1994), AS has had a relatively brief history. Key DSM-IV diagnostic criteria for Asperger's Disorder include impairment in social interaction, and "restricted repetitive and stereotyped patterns of behavior, interests, and

activities” (p. 84). The prevalence of AS is not well established (National Library of Medicine, 2013), varying from one in 1200 using DSM-IV criteria (Attwood, 2007), to more than one in 280 using other common criteria (e.g., Ehlers & Gillberg, 1993). More males are diagnosed with the disorder than females, at a commonly cited ratio of 4:1 (e.g., Ehlers & Gillberg, 1993). Because AS is a developmental disorder and because its characteristics are noticeable in childhood and adolescence, it is typically thought of as a childhood problem (Gaus, 2007). Yet AS is not something that one can outgrow. Although individuals may develop compensatory abilities or improve their social skills as they mature, the core components of AS do not go away (Stanford, 2003).

Terminology used in this paper. Gaus (2007) explains that although “Asperger’s Disorder” was the official DSM-IV name for the condition, Asperger’s (or Asperger) Syndrome is mentioned in the text of the DSM-IV and is widely used. For this reason I will primarily use the term Asperger’s Syndrome, or AS for short, throughout this paper. In quotations from other sources the expression *Aspie* may appear as a reference to someone with Asperger’s Syndrome. The term *Aspie* was coined by Liane Holliday Willey (2001), an author and researcher who has AS. It is widely used with affection in the Asperger community (Lovett, 2005). To refer to individuals who do not have AS or ASD, I choose with some hesitation to use the term “neurotypical” (NT). Although this is a common shorthand way of referring to individuals without AS/ASD, it is an imperfect convenience. Aside from a subtly derogatory implication for those who are not “neurotypical,” it is not completely accurate. Slater-Walker and Slater-Walker (2002) point out that an individual without AS but with some other neurological disorder such as epilepsy is not neurotypical. To refer to dyads in which one partner has AS or ASD and the other likely does not, I use the phrase “AS/ASD-affected relationships” and also, as an extension of the

term neurotypical, the phrase “neurotypically mixed.”

DSM-5. AS is not included as a diagnosis in the newest edition of the DSM, the DSM-5, published in May 2013 (American Psychiatric Association, 2013). Instead, AS is subsumed under a new diagnosis: Autism Spectrum Disorder (ASD; American Psychiatric Association, 2012). Along with the diagnostic criteria for ASD, the DSM-5 includes the following note: “Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger’s disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder” (American Psychiatric Association, 2013, p. 51).

Notwithstanding changes to the DSM, a change in nosology clearly does not change the fact that there are individuals who exhibit a constellation of difficulties in communication, social relationships, and imagination (Aston, 2003), yet who have average or above average intellectual functioning. Thus the concept of Asperger’s Syndrome as a subset of autism spectrum disorder remains a convenient way to refer to individuals who exhibit this combination of characteristics.

Asperger’s Syndrome and Relationships

AS individuals are interested in relationships. Contrary to the stereotype of the “nerdy loner” that one may associate with AS (witness the character of Sheldon Cooper in the popular sitcom, “The Big Bang Theory,” Collins, 2009) many AS individuals actively pursue romantic relationships (Hénault, 2006). Dozens of support groups and online communities exist for both AS individuals and their families, which offer advice for finding partners and improving intimate relationships, and in some cases even act as online dating services (e.g., AutisticDating.net, 2014). Some individuals with AS or ASD may indeed lack interest in romantic relationships and/or choose to remain single as a result of self-doubt or the discomfort of emotional intimacy. However, many individuals with AS and ASD have the same desire for romantic relationships as

neurotypical (NT) individuals. Renty and Roeyers (2007) state that “the group of adults with ASD who are married or cohabiting should not be underestimated” (p. 1247). Stanford (2003) concurs: “Researchers used to think that Aspies either couldn’t or didn’t marry due to their social difficulties. Now we know better” (p. 42).

AS relationships are likely to differ from neurotypical relationships. AS individuals exhibit symptoms of social impairment, an inherently relational construct. Social impairment is one of the fundamental characteristics of AS. Regardless of the criteria used for diagnosis, all recognize social impairment as one of the key components of the disorder. DSM-5 criteria for ASD specify in part that the individual must have “persistent deficits in social communication and social interaction across multiple contexts” (American Psychiatric Association, 2013, p. 50) in order to qualify for a diagnosis. Gillberg’s (1991) diagnostic criteria for AS predated DSM-IV and more closely resemble Hans Asperger’s original description of the condition. These criteria also highlight social impairment as a fundamental element of the diagnosis and are commonly used as an alternative to DSM-IV criteria (Attwood, 2007). Gillberg’s criteria for diagnosis requires that the individual exhibit at least two of the following:

- Difficulties interacting with peers
- Indifference to peer contacts
- Difficulties interpreting social cues
- Socially and emotionally inappropriate behavior

Although AS individuals vary widely, as any other subset of individuals would, some behaviors and personality characteristics tend to be associated with the disorder. For example, an AS individual may exhibit what seems like callous behavior, when in fact the behavior is due to a misunderstanding of social conventions. AS individuals may need more time alone than their

NT counterparts, and may favor solo rather than group activities (Jacobs, 2004). They may have hypo- or hyper-sensitivities (Hénault, 2006) such as an aversion to light touch (Lovett, 2005). AS body language may also be misinterpreted by others, as when lack of eye contact during an interaction inadvertently leads other members of a conversation to believe that the AS individual is disinterested or bored.

Social impairments are likely to affect the quality of intimate relationships. Factors such as eye contact, body language, perceived withdrawal, preference for solo rather than social activities, perceived callous or selfish behavior, discomfort with touch, difficulty with theory of mind (the ability to interpret mental and emotional states of the self as well as others), and perceived or actual difficulty empathizing, could all affect those in a relationship with an AS individual. As Aston (2008) states, “Asperger syndrome will affect some of the fundamental ingredients required for relationships either to form or to be maintained” (p. 13). Even aspects of language development, a deficit which is specifically *not* a criterion for a diagnosis of AS, can be affected by the disorder and can thus impinge upon relationships. Many AS individuals use language quite literally (Jacobs, 2004) and have difficulty understanding figurative constructs such as irony, idioms, or metaphors (Happé, 1993). Pragmatic language skills—fluency with the functional effects of utterances—are often impaired (Wainer, Ingersoll, & Hopwood, 2011).

When two people are in a long-term, committed relationship, every behavior is at risk of being amplified by familiarity and time. One’s need for solitude may be a nonissue in a friendship, but could be an impediment to a satisfying relationship for a partner who is craving frequent companionship. Body language that feels dismissive or disinterested can challenge even the most patient, secure, and understanding of spouses over time. Sensory issues could directly affect intimacy.

Yet the differences that AS individuals exhibit might not necessarily be detrimental to a relationship. As Jacobs (2004) elaborates, AS individuals' use of language tends to be refreshingly straightforward. Attwood and Gray (1999) agree, publishing the "discovery" of positive attributes of many AS individuals including: "Peer relationships characterized by absolute loyalty and impeccable dependability"; "Speaking one's mind irrespective of social context or adherence to personal beliefs"; and "Interested primarily in significant contributions to conversation; preferring to avoid 'ritualistic small talk' or socially trivial statements and superficial conversation" (p. 1). In fact, in his Foreword to Sarah Hendrickx's (2008) book, *Love, Sex & Long-Term Relationships*, Stephen Shore proposes that his AS has contributed to the success of his marriage by requiring both parties to be explicit and precise in their communication, thereby avoiding many misunderstandings.

AS/ASD characteristics are largely relational in nature. It is commonly reported that these characteristics are unfavorable to the overall health of romantic relationships (e.g., Aston, 2001; Bostock-Ling, Cumming, & Bundy, 2012; Stanford, 2003). However, it is unclear whether individual components, or subcategories, of relationship satisfaction are each associated with having AS/ASD or having a partner with AS/ASD, and if so, in what way. This study was designed to assess the relational satisfaction of individual with AS/ASD and their partners across multiple domains. Understanding disparate strengths and weaknesses of such relationships can begin to inform effective treatments for neurotypically mixed couples in distress.

Literature Review

Search Strategies

In order to locate publications on couples affected by AS or ASD, searches of the following databases were executed: MedLine, Academic Search Complete, PsycINFO,

PsycBOOKS, Psychology and Behavioral Sciences Collection, and ProQuest Dissertations & Theses. Searches were composed of two fields combined with “and.” All combinations of the first and second fields were tried. In the first search field, the terms “Aspergers,” “Asperger’s,” “Asperger Syndrome,” “Asperger’s Syndrome,” “Asperger’s Disorder,” and “autism” were used. The second search field included “relationship,” “marriage,” “couple,” “relationship quality,” “relationship satisfaction,” “marital relations,” “marital satisfaction,” “dyadic adjustment,” and “MSI-R.” Each term was specified to be searched in any area of the article, book, or dissertation, including keywords, title, and body text. In addition, using the thesaurus feature of PsychInfo, two concepts were searched for simultaneously. The first concept was “Aspergers Syndrome” or “Autism.” The second concept, combined with the first, was an “or” combination of “Marital Relations,” “Marital Satisfaction,” “Marriage Counseling,” and “Couples Therapy.” These searches resulted in three studies and one meta-analysis that examined in part the nature of relationships affected by AS. From these results (discussed below), both the citations and citing documents were examined to see if they would yield further pertinent results; they did not.

Case Studies, Personal Accounts, and Reference Works

According to Tony Attwood (2007), a leading expert in the field, over 2000 studies and more than 100 books have been published on the subject of AS to date. A dozen or so books are available on the subject of adult AS and relationships, but all are written as suggestions for successful partnerships based on either personal experience (authors themselves had AS or were partnered with an AS individual; e.g., Finch, 2012; Jacobs, 2004; Stanford, 2003), and/or by therapists recommending strategies they have developed in their practices (e.g., Aston, 2008; Hénault, 2006; Hendrickx, 2008). Few have used empirical data to support their assertions and recommendations.

Tony Attwood's (2007) *The Complete Guide to Asperger's Syndrome*, a thorough reference book for the disorder, includes a short chapter on long-term relationships that describes some potential problems and suggests strategies for improving AS relationships. Valerie Gaus' (2011) target audience for *Living Well on the Spectrum* is individuals with AS or less severe forms of ASD (formerly called "high functioning autism.") In this workbook, Gaus provides Cognitive Behavioral Therapy (CBT)-based guidance for dating, sex, and marriage, as well as suggested approaches for navigating home, school, work, friendships, and health. In *Solutions for Adults with Asperger Syndrome*, Juanita Lovett (2005) devotes almost a third of the book to helping AS adults build successful relationships, describing some of the challenges AS individuals may face, and offering suggestions for coping with or compensating for areas of weakness.

Although there is a great deal of literature on AS in general, and AS in children and adolescents in particular, publications devoted entirely to AS adults in relationships and their partners are comparatively rare. Early publications on AS and relationships in 2004 and before, tended to be anecdotal accounts of NT individuals in intimate relationships with an AS partner, or advice based on the experience of being in such a relationship. Such accounts include Maxine Aston's (2001) *The Other Half of Asperger Syndrome*, in which Aston provides emotional validation for the NT partner's probable feelings of loneliness, advises AS couples to seek a diagnosis, suggests AS-specific ways to improve communication, and offers suggestions for socializing as a couple. The edited volume, *Asperger's Syndrome and Adults...Is Anyone Listening?: Essays and Poems by Spouses, Partners, and Parents of Adults with Asperger's Syndrome* (Rodman, 2003), explores the effects of AS on family members. It introduces to the reader the now popular phrase used by partners of AS individuals, "The Cassandra Phenomenon"

or “The Cassandra Syndrome” (Rodman, 2003). The Cassandra Syndrome takes its name from a character in Greek mythology who was given the ability to foretell the future, but was also given a curse such that no one would believe her. When seeking help from physicians and therapists, many NT individuals in relationships with an AS partner report not being listened to, not being understood, or even being labeled as needy, alarmist, or as having unrealistic expectations (Newton, 2011). Professionals and lay persons alike may be unfamiliar with the presentation of Asperger’s Syndrome in adults and how it affects relationships.

In her book *Asperger Syndrome and Long Term Relationships*, based on her research and personal experience in an AS marriage, Ashley Stanford (2003) guides the reader through all of the DSM-IV diagnostic criteria for AS and describes in detail how each characteristic might manifest itself in an adult. Barbara Jacobs (2004) intermingles questionnaires and checklists with a narrative of her own experience in a relationship with an AS man in her book, *Loving Mr. Spock*. Gisela Slater-Walker and her husband Christopher Slater-Walker (2002), who was diagnosed with AS three years after their marriage, together wrote *An Asperger Marriage*. Alternating chapters, the authors provide detailed accounts of their experiences in the marriage, covering topics such as communication, affection, romance, sex, finances, household chores, socializing, and parenting. Later publications continued to include personal experiences (e.g., Finch, 2012), but also included survey responses and recommendations from clinicians working with neurotypically mixed couples (e.g., Aston, 2008; Hénault, 2006; Hendrickx, 2008).

AS and Relationship Satisfaction

In their paper “Individual and Marital Adaptation in Men with Autism Spectrum Disorder and their Spouses: The Role of Social Support and Coping Strategies,” Renty and Roeyers (2007) examined the marital adaptation of 26 couples in which the husband was

diagnosed with AS/ASD. They found that, for both men and women in their study, more received and perceived support from the spouse was associated with higher levels of marital adjustment. Support can include such things as nurturing, alliance, and reassurances. Renty and Roeyers also found that “Women whose husbands showed less autism-specific traits reported higher levels of marital satisfaction” (p. 1252). They determined that the negative effect on marital adjustment related to higher numbers of AS/ASD traits in the husbands was mediated by perceived spousal support.

Pollmann, Finkenauer, and Begeer (2010) studied 195 couples to determine whether autistic traits were related to relationship satisfaction for both partners. The researchers were studying a non-clinical sample: those individuals who did not meet criteria for an AS/ASD diagnosis. Instead, the researchers measured the degree of autistic-like traits of the participants, also referred to as the *broader autism phenotype* (BAP). The BAP consists of qualities such as pragmatic language difficulties, aloofness, and rigidity (Wainer et al., 2011). In this study, for men, higher levels of autistic traits were associated with decreased marital satisfaction *for themselves* but not for their partners. Women’s marital satisfaction was not associated with their own reported level of autistic traits. In contrast to the findings of Renty and Roeyers, Pollmann et al. found no association between marital satisfaction and the level of the *partner’s* autistic traits.

Lau and Peterson (2011) studied AS adults and attachment issues in the context of intimate relationships and parenthood. The majority of AS adults in this study reported an avoidant adult attachment style, characterized by Hazan and Shaver (1987) as “fear of closeness and lack of trust” (p. 513).. Lau and Peterson found that families with a child with AS had significantly less parenthood satisfaction than those whose children did not have AS. They also noted that the AS partners preferred self-sufficiency to intimacy and were uncomfortable with

dependency (Lau & Peterson, 2011). However, the researchers found no significant difference in *marital* satisfaction whether partners had AS or not, or whether their children had AS or not.

This is consistent with the findings of Pollmann et al. (2010). “In summary, these results reveal, surprisingly, that the husband’s or wife’s AS status had little impact upon any aspect of marital quality” (Lau & Peterson, 2011, p. 397). Pollman et al. agree: “The finding that the wives’ relationship satisfaction is not influenced by husbands’ score...is especially surprising because responsiveness, trust, and intimacy describe reciprocal processes between partners” (p. 476).

Bostock-Ling et al. (2012) conducted a meta-analysis of studies of the wellbeing of NT women in relationships with AS men. They identified 10 peer reviewed articles or theses that investigated adult couples where the male partner had AS/ASD. None of the studies were intervention studies. Of the 10 studies that met their criteria for inclusion, six were descriptive only. One study was a thesis that investigated the association of BAP to relationship expectations, and was therefore not directly relevant to the current study. The final three studies included in the meta-analysis were the three studies described above. Overall, Bostock-Ling et al. graded the existing research on this topic as weak, noting that literature currently used by clinicians to work with neurotypically mixed couples is nonevidence-based.

As Bostock-Ling et al. (2012) point out, individuals in AS/ASD-affected relationships are treated and informed, both personally and professionally, based on anecdotal or theoretical methods. Self or partner diagnosis is also common. Voils and Maciejewski (2011) summarize the problem perfectly: “Prior to developing interventions...we must know what the clinical problem is and to what extent it must be addressed. Which outcomes could be improved?” (p. 39). I propose that the answer to this question is currently unknown.

Purpose of the Study

Researchers Lau and Peterson (2011), and Pollmann et al. (2010) expressed surprise that the presence or absence of AS/ASD traits in their sample was not associated with the marital satisfaction of the partner. Given the social deficits associated with the disorder, it is surprising indeed that the relational satisfaction of either individual would not be affected by the presence of AS/ASD in one of the partners. The purpose of the current study was to understand the more subtle shape of relational satisfaction and dissatisfaction within an NT/AS dyad. To do so, I compared marital satisfaction of individuals who are in AS/ASD relationships with those from a representative sample of the population (Snyder, 2004). The sample acquired for this study is referred to as the test sample (TS). The comparison sample, the sample used to standardize scoring for the assessment instrument, is referred to as the standardization sample (SS). The primary focus of this study was to compare the mean scores from the TS with mean scores from the SS on each of several subscales, separated by gender. As secondary analyses, using only TS data, mean scores for men vs. women were compared, as were mean scores for AS/ASD vs. non-AS/ASD individuals.

For their studies, both Renty and Roeyers (2007) and Pollmann et al. (2010) used the Dyadic Adjustment Scale (DAS; Spanier, 1976) to measure the marital adaptation of partners. The DAS comprises four subscales: dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression. The four scales are summed to produce an overall Dyadic Adjustment score. Lau and Peterson (2011) used Norton's (1983) Quality Marriage Index (QMI) to derive a total marital satisfaction score that was used for comparison purposes.

The current study used the Marital Satisfaction Inventory, Revised (MSI-R; Snyder, 2004) to measure global relationship satisfaction as well as ten other components of marital

adjustment. The MSI-R, discussed in more detail below, contains 11 content subscales, each measuring a different aspect of marital satisfaction. For each subscale, the means of a sample of individuals in neurotypically mixed relationships were compared with the means of the standardization sample used for the MSI-R. Thus, multiple aspects of marital satisfaction were analyzed.

Hypotheses

The primary question that this study is intended to answer is:

Question: Is the marital satisfaction of individuals in relationships in which at least one partner has Asperger's Syndrome (AS) or Autism Spectrum Disorder (ASD) different in some statistically significant way from the marital satisfaction of individuals in neurotypical (NT) relationships?

The hypothesis that this study proposed was:

Hypothesis: The marital satisfaction of individuals in relationships in which at least one partner has Asperger's Syndrome (AS) or Autism Spectrum Disorder (ASD) will differ in some statistically significant way, compared with the marital satisfaction of individuals in relationships in which both partners are neurotypical.

In order to take full advantage of the multiple domains assessed by the MSI-R, I offered specific, differential predictions for each subscale, concerning likely differences between the mean scores on the TS and those on the SS. These predictions are summarized in Table 1.

Table 1

Predicted Differences Between Test Sample and Standardization Sample

Relationship Dimension	MSI-R subscale	Prediction
Global Distress	GDS	none
Dissatisfaction with Affective Communication	AFC	TS > SS
Dissatisfaction with Problem-Solving Communication	PSC	TS ≠ SS
Aggression in the Relationship	AGG	TS < SS
Dissatisfaction with Leisure Time Spent Together	TTO	TS > SS
Disagreement About Finances	FIN	none
Sexual Dissatisfaction	SEX	TS > SS
Nontraditional Gender Roles	ROR	none
Family of Origin History of Distress	FAM	none
Conflict Over Child Rearing	CCR	TS > SS
Dissatisfaction with Children	DSC	none

Note. Relationship Dimension items are worded to reflect the scoring of the instrument: higher scores reflect greater distress.

Method

Participants

Inclusion criteria. Qualifications for participation included reporting age of 18 years or older, and being in a relationship in which at least one partner had been diagnosed with either AS or ASD prior to the start of the study. In order to match the standardization sample of the MSI-R as closely as possible, couples needed to be either (a) married or (b) living together for a minimum of six months. Research by Means-Christensen, Snyder, and Negy (2003) supports the use of the MSI-R with non-traditional couples. Therefore, same-sex couples were invited to participate. There were no other restrictions on participation, such as presence or absence of children or place of residence.

In this study, I made a deliberate decision to include couples regardless of whether they had children, or whether they had an AS child. While I could have differentiated between such couples in the analysis, such a differentiation would have been theoretical rather than practical. Autism spectrum disorders tend to run in families and likely have genetic components to them (National Library of Medicine, 2013). The population of AS/ASD-affected couples is therefore likely to include a percentage of families with AS children that exceeds that of families in which both parents are NT. In selecting participants without regard to their parental status, I believe I collected a sample that is more representative of the population with respect to child status.

Recruitment of participants. Subjects were recruited via newsletters, mailing lists, forums, websites, and other online resources dedicated to individuals on the autism spectrum and their families. Each participant was offered a \$5 gift card to either iTunes (2015) or Amazon.com (2015). I created a website containing a description of this study as well as contact information for those interested in participating (Bolling, 2014). The one-page website is shown in Appendix A. In all recruitment materials, this website was referenced so that interested parties could obtain updated and extended information. However, the website did not make any reference to gift cards, in order to avoid targeting by automated search engines and unwanted solicitation.

The following websites participated in the recruitment of subjects by posting a call for participants on either their homepage or a dedicated research page: Tony Attwood (Attwood, 2013), The National Autistic Society of the United Kingdom (The National Autistic Society, 2014), Research Autism (Research Autism, 2014), Organization for Autism Research (Organization for Autism Research, 2014), Autism Society Canada (Autism Society Canada, 2014), Families of Adults Affected by Asperger's (FAAAS, 2013), The Neurotypical Site

(Newton, 2011), The Asperger/Autism Network (formerly Asperger's Association of New England; AANE, 2013), and the Autism Society of Minnesota (AuSM, 2014). One group posted a call for participants on their Facebook page: Action for Asperger's (Action for Asperger's, 2014).

Several organizations also publicized this study in their newsletters, both electronic and physical, or via email to their mailing lists. These groups included: The Global and Regional Asperger Syndrome Partnership (GRASP, 2014), Asperger Syndrome and High Functioning Autism Association (AHANY, 2008), US Autism and Asperger Association (US Autism and Asperger Association, 2014), and the New Hampshire Psychological Association (NHPA, 2014). An advertisement for the study was also purchased and appeared in the Asperger/Autism Network's program for their yearly conference in October 2014, "Asperger Syndrome Connections 2014: Practical Perspectives, Positive Lives" (AANE, 2014c).

There exist many online forums for sharing information, providing advice, and requesting emotional support. Several such forums are devoted to AS/ASD individuals and/or their partners. The following forums were generous enough to allow me to post a request for participants with a link to my website in their forum: Oasis@MAAP (OASIS@MAAP, 2013), Aspires Relationships (ASPIRES, 2013), Asperger's And The Other Half (The Other Half of Asperger's Syndrome, 2014), AS And Their Partners (AS And Their Partners, 2014), AS And Relationships that Work Differently (AS And Relationships That Work Differently, 2014), AS Partners (AS Partners, 2014), and, in addition to their website listing, the Spouse/Partner forum of the Asperger/Autism Network (AANE, 2014a).

For a comparison of two independent sample means, Cohen (1992) suggests that a sample size of 64 individuals will provide a .80 probability of detecting medium effect size at

$\alpha = .05$. Thus, I sought to recruit at least 64 individuals for this study. Given that I was interested in the relationship satisfaction of both AS and NT partners in neurotypically mixed relationships, both partners were invited to participate if they so chose.

Measure

The MSI-R. The Marital Satisfaction Inventory, Revised (MSI-R; Snyder, 2004) is a self-report measure that identifies positive as well as potentially problematic aspects of marital satisfaction. A strong advantage of the MSI-R over other commonly used measures of marital quality such as the DAS (Spanier, 1976) is that the MSI-R produces 11 content subscales, allowing for much finer granularity than other instruments when interpreting results.

The MSI-R was derived from a previous measure, the Marital Satisfaction Inventory (MSI). The updated instrument, published in 1997, contains 130 fewer items than the original, an additional subscale for aggression, and reworded and refined questions (Snyder, 2004). The MSI-R also used a larger standardization sample than did the previous version. The MSI had been subjected to more than 20 studies examining its discriminant validity (Snyder, 2004). As Snyder (2004) points out, couples with problems in one domain are likely to have problems in other domains as well, making it a difficult task to isolate and therefore to discriminate between couples affected by one problem versus another. Nonetheless, the MSI showed good discriminant validity for couples with such diverse challenges as those in general marital therapy (Snyder, Wills, & Keiser, 1981), those with financial difficulties (Aniol & Snyder, 1997), and adult psychiatric samples (Snyder & Regts, 1990). In order to establish the validity of the newer MSI-R measure, Snyder (2004) examined the correlation of the new subscales to the original ones, using a sample of 646 individuals. Correlations were high, ranging from .94 for the TTO, FIN, and DSC subscales to .98 for GDS, with a mean value of .955 across all content subscales.

The MSI-R consists of 150 questions, the last 21 of which are applicable only to couples who have children. The normative data, or standardization sample, for the measure was culled from 1,020 couples, or 2,040 individuals, and collected from over 50 sites across the United States. The standardization sample was chosen to represent the general population of the United States with respect to age, educational level, geographic region, ethnicity, and occupation (Snyder, 2004). Separate norms are used when calculating standard scores for men versus women; thus gender must be indicated in order to score the questionnaire. The MSI-R has good internal consistency, with Cronbach's α coefficients ranging from .70 on the DSC subscale to .93 on the GDS subscale (Snyder, 2004). Test-retest reliability over a six-week period ranged from .74 on the GDS, FIN, and CCR subscales to .88 on the ROR subscale (Snyder, 2004). The MSI-R is usually considered unscorable if 13 or more (10%) of the initial 129 items are unanswered (the remaining questions relate to children and parenting and are optional).

MSI-R Subscales. The MSI-R consists of two subscales that are used to aid interpretation, and 11 content subscales. Each subscale has a mean T-Score of 50 and a standard deviation of 10. With the exception of the ROR scale, higher scores on the content scales reflect a greater level of distress.

Inconsistency Scale (INC). The first of the non-content scales is the INC, or inconsistency scale. According to Snyder (2004), scores above 65T on this scale may indicate careless or even random responding.

Conventionalization Scale (CNV). This second non-content scale assesses a respondent's tendency to distort his or her relationship such that it appears to be more well-adjusted than it may actually be. Low scores on this scale (<45T) are common for couples seeking counseling, while very low scores (<40T) may suggest that the respondent pays disproportionate attention to

the negative features of the relationship (Snyder, 2004).

Global Distress Scale (GDS). The GDS is the first of the 11 content scales. It measures overall dissatisfaction with the relationship. Convergent validity of the GDS subscale was supported by research, with several studies finding a high correlation between the GDS and the Dyadic Adjustment Scale (e.g., Whisman & Jacobson, 1992). As with other subscales of the MSI-R, higher *T*-scores indicate a higher level of distress; lower *T*-scores indicate lower distress, or higher satisfaction.

Affective Communication Scale (AFC). According to Snyder (2004), the AFC “evaluates the respondent’s dissatisfaction with the amount of affection and understanding expressed by his or her partner” (p. 21). Snyder, Trull, and Wills (1987) found convergence between observational measures and the self-report MSI-R, which was particularly strong for the AFC and PSC subscales.

Problem Solving Communication Scale (PSC). Snyder (2004) explains that the PSC “assesses the couple’s general ineffectiveness in resolving differences, and measures overt discord rather than underlying feelings of estrangement” (p. 22). Evidence for the convergent validity of the PSC scale comes from a study by Waring, Stalker, Carver, and Gitta (1991), who found improvement in problem-solving communication, as measured by the PSC, in severely distressed couples following marital therapy, as compared with a wait-list control group.

Aggression Scale (AGG). The AGG scale examines intimidation as well as aggression ranging from yelling to breaking items to personal assaults on the partner. Rather than assessing for frequency or recency, it is a screening tool that focuses on previous aggressive or intimidating incidents. The AGG scale is the only content scale that was not a part of the original MSI. Snyder and Snow (1995; as cited in Snyder, 2004) found that the AGG scale discriminated

between battered women and non-battered women in distressed relationships, but did not distinguish between physically abusing and non-abusing men.

Time Together Scale (TTO). The TTO assesses couples' leisure time together. "The TTO scale can be viewed as a measure of the couple's 'friendship' as reflected in behavioral intimacy – in comparison to emotional intimacy...or sexual intimacy" (Snyder, 2004, p. 23). As with the other scales of the MSI-R, higher values on the TTO reflect greater dissatisfaction. Smith, Snyder, Trull, and Monsma (1988) found evidence for convergent validity of the TTO in a study where higher scores on the TTO scale were associated with less time spent in leisure activities pursued jointly with one's spouse.

Disagreement About Finances Scale (FIN). This scale assesses disagreement within the relationship regarding management of finances. In a 1997 study, Aniol and Snyder found that higher scores on the FIN scale were positively associated with couples' financial difficulties (Aniol & Snyder, 1997).

Sexual Dissatisfaction Scale (SEX). The SEX scale assesses the respondent's level of discontent with sexual activity within the partnership. Snyder and Berg (1983) found that higher scores on the SEX scale were associated with sexual grievances in a relationship such as infrequent intercourse. Hénault (2006) explains that AS characteristics such as rigidity and a desire for rituals may hinder a satisfying sexual relationship.

Role Orientation Scale (ROR). The ROR assesses the respondent's inclination toward traditional versus nontraditional gender roles for both marriage and parenting. It is the only scale that is scored such that higher *T*-values represent less extreme positions. In this case, that means that higher *T*-scores reflect more egalitarian views. Snyder, Velasquez, Clark, and Means-Christensen (1997) found a correlation in scores on the ROR between adult children and

their parents. However the same study found that “ROR scores were mostly unrelated to more global gender-role attitudes” (Snyder, 2004, p. 68). The scale is not a measure of distress in and of itself, but can be useful in understanding the context of a couple’s relationship.

Family History of Distress Scale (FAM). The FAM scale assesses the distress associated with the respondent’s family of origin. Researchers Ryan, Kawash, Fine, and Powel (1994) found that “High scores on the FAM seem to reflect a positive regard for the emotional atmosphere in the family of origin” (p. 158).

Dissatisfaction With Children Scale (DSC). Snyder (2004) explains that the “DSC assesses respondents’ concerns regarding the emotional and behavioral adjustment of their children, quality of the parent-child relationship, and negative impact of child rearing demands” (p. 25).

Conflict Over Child Rearing Scale (CCR). The CCR scale assesses the respondent’s level of conflict with their partner over child-rearing practices. Unlike the DSC, the CCR focuses on the relationship between the adult partners, rather than the parent-child relationship.

Data Collection

With permission from the publisher of the MSI-R, Western Psychological Services, the MSI-R was implemented online via SurveyMonkey (2013a). Demographic questions for gender and whether the participant had a diagnosis of AS/ASD were added. Appropriate venues were then identified and contacted with a request to advertise the study. The short description of the study given to those organizations willing to publicize it appears in Appendix B. Some organizations requested a longer and more detailed description. Those organizations were given the same content that appeared on the website, shown in Appendix A, with the addition of information about the gift card offering. When interested parties contacted me, they were

screened to ensure that they met inclusion criteria. For those who met criteria and wanted to continue, their email, a CoupleID, and password were uploaded to SurveyMonkey. From SurveyMonkey I generated an email to them that provided directions for accessing the online survey, as seen in Appendix C. In this same email, subjects were reminded that participation was voluntary and anonymous, that the survey required approximately 25 minutes to complete (WPS, 2013), and that there were minimal-to-no risks to participation. Consent was assumed if the person then chose to complete the survey.

SurveyMonkey ensures that participants' identifying information is kept confidential, with email addresses and other information kept on secure servers located in the United States. SurveyMonkey (2013c) further ensures that they will not sell, rent, or otherwise share participant information with any third party. SurveyMonkey compiles the resulting data from surveys into Excel and SPSS formats and allows the investigator to access the results via a secure download. Downloaded data was kept in a password-protected file on the principal researcher's computer. No personal data was collected in the survey, and the identities of the participants were not linked to the data in any way. Minimal participant contact information was saved only in cases where the participant requested a completed copy of the study. In those instances, the first name and email address of the person requesting results were kept in a separate password-protected file on the principal investigator's computer, and will be destroyed once the copies are disseminated.

Procedure

I obtained the rights from WPS to administer 145 instances of the MSI-R via online survey. A total of 144 individuals completed the survey. Of these, 18 profiles were eliminated due to a high likelihood of invalidity and/or not meeting study criteria. Two of the 18 eliminated profiles were from respondents who later revealed that neither partner in their relationship had a

confirmed diagnosis of AS or ASD. Two more completed less than 90% of the initial 129 questions. The decision to eliminate the remaining 14 profiles was based on two criteria:

(a) Those with a score on the inconsistency scale (INC) of greater than 65T, combined with (b) an unreasonably low time of five minute or less to complete the survey. Profiles with $INC > 65T$ but no other unusual characteristics were retained. No participants with $INC < 65T$ spent fewer than seven minutes completing the survey.

In order to estimate the fastest reasonable time for completion, I took the survey four times on each of three different computers, going as quickly as possible while reading the text of the questions. I allowed myself to make haphazard choices for answers and skipped the optional child-related questions at the end. My mean completion time for these 12 trials was seven minutes. I was never able to complete it in fewer than five minutes.

Although the MSI-R manual states that INC scores $> 65T$ may indicate carelessness in responding or a respondent who is not self-reflective (Snyder, 2004), I decided not to eliminate profiles based solely on the INC score. The INC raw score is calculated by comparing the responses to either very similar questions, or to questions that could be interpreted as being opposite in nature. A point is scored for equality in the former case, and for inequality in the latter. In reviewing user scores on the INC scale, I noticed a tendency toward higher scores for AS individuals. After examining the individual questions that make up the INC score, I considered the possibility that AS individuals might interpret the questions with a higher degree of specificity than NT individuals, resulting in an artificially inflated INC score. Two questions on the AGG scale that are also used to compute the INC score illustrate this scenario.

Question 22 of the MSI-R states, “My partner has slapped me¹” (Snyder, 2004). The answer to this is compared with that of question 96, “My partner has never pushed me or grabbed me in anger¹” (Snyder, 2004). When the answers to these two questions match, the raw INC score is increased by one. The intent of both of these questions is to assess aggressive behaviors in the context of angry affect. The expectation is that for most couples, if one question was true, the other would likely be false. However, one can readily see that the specific actions mentioned in the questions are different from one another. Thus, for example, someone answering the questions meticulously might recall and report a slap in an otherwise non-violent relationship. In contrast, someone answering more casually might also recall a slap but discount it because of an otherwise loving and non-violent atmosphere.

Once the number of participants approached the number of licenses for use of the MSI-R, the study was closed. All organizations that had advertised the study were contacted so that they could remove references to it from their publicity materials. From SurveyMonkey, I downloaded the summary data in Excel format. Because WPS does not offer its own electronic version of the MSI-R or electronic scoring, I designed an Excel spreadsheet to calculate each subscale of the MSI-R and convert raw scores to T scores. I then examined the data for invalid profiles, and removed 18 profiles as described above. The resulting data was used for all analyses.

Results

Demographic Information

The survey was completed by 144 individuals, resulting in 126 valid profiles. More women than men responded and more AS/ASD than NT individuals responded. Of the total

¹ Sample items from the *Marital Satisfaction Inventory, Revised (MSI-R)* copyright © 1997 by Western Psychological Services. Reprinted by K. Bolling, Antioch University New England, for scholarly display purposes by permission of the publisher, WPS, 625 Alaska Avenue, Torrance, California 90503, U.S.A. Not to be reprinted in whole or in part for any additional purpose without the expressed, written permission of the publisher (rights@wpspublish.com). All rights reserved.

respondents, 25% were AS women, which is similar to the estimated ratio of 1:4 women vs. men with AS (Ehlers & Gillberg, 1993). Heterosexual as well as same sex couples were included in the study. In the cases where both partners responded it was possible to determine whether they were both diagnosed with AS/ASD, and whether they were a heterosexual or same-sex couple. In four of the relationships, both partners had an AS/ASD diagnosis. Two of the partnerships were same-sex. Thus, the number of male respondents is not equal to the number of female respondents, and the number of respondents with an AS/ASD diagnosis does not equal the number of respondents without the diagnosis.

Table 2

Study Demographics

	N of subjects (126 total)	Sample %
Gender		
Male	53	42%
Female	73	58%
Diagnosis		
NT	54	43%
AS/ASD	72	57%
Gender + Diagnosis		
Male – NT	12	10%
Male – AS	41	32%
Female – NT	42	33%
Female – AS	31	25%
Paired Partner Responses		
Both Partners Responded	90	71%
One Partner Responded	36	29%
Respondents with Children		
	N=51	
Male	19	37% / 15% ⁺
Female	32	63% / 25% ⁺
NT	21	41% / 17% ⁺
AS/ASD	30	59% / 24% ⁺

Note. ⁺Percentages reported as a factor of (a) N=51 / (b) N= 126. Percentages out of N=126 do not add up to 100% because not all respondents answered the optional child-related questions.

Analysis

The primary purpose of this study was to determine if relationships in which at least one person has a diagnosis of AS/ASD differ in aspects of satisfaction from relationships in the

general population. In order to carry this out, a sample of individuals who are involved in an AS/ASD relationship was collected. Subjects were administered an online version of the MSI-R. Independent samples two-tailed t-tests were used to compare the means of the two samples for each MSI-R subscale except for the following: (a) INC (Inconsistency) because it is not meaningful for comparison purposes, (b) CNV (Conventionalization) because of skewness and kurtosis, and (c) ROR (Traditional Gender Roles) because of kurtosis. I had planned to use Holm's step-down procedure (Aickin & Gensler, 1996) to account for the increased experiment-wise error-rate resulting from multiple comparisons. However, because all of the results exceeded even my most conservative alpha threshold of .01, step-down procedures proved unnecessary. All comparison tests were conducted using SPSS version 21.

Prior to comparison, sets of data were analyzed to ensure normality for use in independent samples t-testing by using the D'Agostino-Pearson K^2 test (D'Agostino & Belanger, 1990). The D'Agostino-Pearson test computes a single P-value from the skewness and kurtosis coefficients (Sheskin, 2004). With the exception of five sets of data, all were normally distributed, with $P > .05$. Data was analyzed for 12 of the 13 scales (INC was not included), for each of four subsets of respondents being studied: males, females, AS/ASD individuals, and NT individuals. Statistical tests of normality were performed using MedCalc for Windows, version 15.2.2 (MedCalc Software, Ostend, Belgium). Histograms for each of these 48 data sets along with their D'Agostino-Pearson P-values are show in Appendix D. The five distributions that were non-normal were (a) females on the CNV scale, (b) NT individuals on the CNV scale, (c) males on the ROR scale, (d) NT individuals on the ROR scale, and (e) AS/ASD individuals on the ROR scale. All five of these non-normal distributions were contained within the CNV and ROR scales. Interpretation of the CNV and ROR scales was not central to the study and therefore

they were not used in any subsequent analyses.

The absence of raw data for the normative sample restricted examination of variance to the standard deviations published in the MSI-R manual. Adopting a rough index of equality of variances as standard deviations not differing by a factor of more than two (Howell, 2008), variances in the TS on all of the MSI-R subscales were equivalent to the variances from the SS. For the two secondary analyses, which compared TS to TS data, homogeneity of variances was verified by Levene's test for equality of variances ($p > .05$).

Primary Research Findings

Of the 20 comparisons between TS data and SS data (10 content scales each for males and females), 15 were significantly different at $p < .001$, and an additional one at $p < .01$. Only four comparisons were found not to be significantly different. For both men and women, TS mean scores on the Dissatisfaction with Children (DSC) scale were similar to those from SS. For men only, Disagreement about Finances (FIN) and Sexual Dissatisfaction (SEX) scales were also similar between the TS and SS. In all cases of statistical significance, the TS scores were higher, indicating greater distress, than those of the SS. Table 3 summarizes these results. Table 4 presents a simplified form of the results, using the same format as Table 1: Predictions.

Table 3
Comparison of Means Between Test Sample and Standardization Sample

Subscale	SS M (SD)	TS M (SD)	Mean Difference [95% CI]	Comparison
<i>Males</i>		<i>N=1020</i>	<i>N=53</i>	<i>df = 1071</i> [□]
Global Distress	50.2 (9.3)	59.4 (8.8)	9.2 [6.6 – 11.7]	t = 7.34 ^{**}
Affective Communication	50.4 (9.1)	57.9 (8.8)	7.4 [4.9 – 10]	t = 6.00 ^{**}
Problem-Solving Communication	50.0 (9.7)	56.6 (10)	6.5 [3.8 – 9.2]	t = 4.63 ^{**}
Aggression	50.3 (9.1)	55.5 (10.1)	5.2 [2.7 – 7.7]	t = 3.66 ^{**}
Time Together	50.1 (9.5)	55.2 (9.6)	5.1 [2.4 – 7.7]	t = 3.78 ^{**}
Disagreement About Finances	50.3 (9.2)	53.0 (10.6)	2.7 [0.1 – 5.3]	t = 1.82, ns
Sexual Dissatisfaction	50.0 (9.6)	52.3 (10.0)	2.3 [-0.4 – 4.9]	t = 1.61, ns
Role Orientation	49.9 (9.6)	55.6 (11.4)	5.6 [3.0 – 8.3]	na
Family History of Distress	50.0 (9.6)	57.3 (10.4)	7.3 [4.6 – 10]	t = 4.97 ^{**}
Dissatisfaction With Children	50.2 (9.4) ⁺	53.0 (8.6) ⁺⁺	2.8 [-1.5 – 7.1]	t(722) = 1.41, ns
Conflict Over Child Rearing	50.4 (8.8) ⁺	56.1 (8.7) ⁺⁺	5.8 [1.7 – 9.8]	t(722) = 2.83 [*]
<i>Females</i>		<i>N=1020</i>	<i>N=73</i>	<i>df = 1091</i> [□]
Global Distress	50.3 (9.2)	60.8 (9.9)	10.5 [8.1 – 12.8]	t = 8.77 ^{**}
Affective Communication	50.2 (9.4)	58.5 (9.7)	8.3 [6.1 – 10.5]	t = 7.1 ^{**}
Problem-Solving Communication	50.0 (9.7)	58.4 (10.5)	8.3 [6.0 – 10.6]	t = 6.59 ^{**}
Aggression	50.3 (9.0)	55.9 (9.8)	5.6 [3.4 – 7.8]	t = 4.75 ^{**}
Time Together	50.1 (9.4)	56.9 (9.6)	6.8 [4.5 – 9.0]	t = 5.81 ^{**}
Disagreement About Finances	50.1 (9.3)	53.8 (10.6)	3.7 [1.4 – 5.9]	t = 2.86 ^{**}
Sexual Dissatisfaction	50.2 (9.5)	58.4 (11.5)	8.2 [5.9 – 10.5]	t = 5.97 ^{**}
Role Orientation	49.9 (9.5)	55.5 (8.5)	5.6 [3.4 – 7.9]	na
Family History of Distress	50.1 (9.4)	56.5 (9.3)	6.4 [4.1 – 8.6]	t = 5.66 ^{**}
Dissatisfaction With Children	50.3 (9.4) ⁺⁺⁺	54.2 (11.7) ⁺⁺⁺⁺	3.9 [0.6 – 7.3]	t(741) = 1.87, ns
Conflict Over Child Rearing	50.6 (9.0) ⁺⁺⁺	57.5 (11.3) ⁺⁺⁺⁺	6.9 [3.7 – 10.2]	t(741) = 3.41 ^{**}

Note. [□] or as shown in parentheses na = not analyzed ns = not significantly different
^{*} p < .01 ^{**} p < .001 ⁺ n=705 ⁺⁺ n=19 ⁺⁺⁺ n = 711 ⁺⁺⁺⁺ n=32

Table 4

Resultant Differences Between Test Sample and Standardization Sample

Relationship Dimension	MSI-R subscale	Result
Global Distress	GDS	TS > SS
Dissatisfaction with Affective Communication	AFC	TS > SS
Dissatisfaction with Problem-Solving Communication	PSC	TS > SS
Aggression in the Relationship	AGG	TS > SS
Dissatisfaction with Leisure Time Spent Together	TTO	TS > SS
Disagreement About Finances	FIN	TS > SS ⁺
Sexual Dissatisfaction	SEX	TS > SS ⁺
Nontraditional Gender Roles	ROR	na
Family of Origin History of Distress	FAM	TS > SS
Conflict Over Child Rearing	CCR	TS > SS
Dissatisfaction with Children	DSC	TS = SS

Note. na = not analyzed ⁺For females participants only

Comparison of Male and Female Scores

In addition to the primary study comparing the TS means to the SS means, the means of male participants in the TS were compared to the means of female participants in the TS. Table 5 presents these results. All were found to be statistically insignificant except for Sexual Dissatisfaction (SEX). On this scale, females ($M = 58.45$, $SD = 11.48$) were more dissatisfied than males ($M = 52.30$, $SD = 10.02$; M difference = -6.15, 95% CI [-10.04, -2.26], $t(124) = -3.13$, $p = .002$). Figure 1 displays results of the SEX scale comparison. Barcharts for the remaining scales can be found in Appendix E.

Table 5

Comparison of Male Test Sample and Female Test Sample Scores

Subscale	Test Sample Males Mean (SD)	Test Sample Females Mean (SD)	Mean Difference [95% CI]	Comparison
	<i>N=53</i>	<i>N=73</i>		<i>df = 124</i>
Global Distress	59.4 (8.8)	60.8 (9.9)	1.3 [-2.1 – 4.7]	t = -0.78, ns
Affective Communication	57.9 (8.8)	58.5 (9.7)	0.6 [-2.7 – 3.9]	t = -0.36, ns
Problem-Solving Communication	56.6 (10.0)	58.4 (10.5)	1.8 [-1.8 – 5.5]	t = -0.99, ns
Aggression	55.5 (10.1)	55.9 (9.8)	0.4 [-3.2 – 4.0]	t = -0.22, ns
Time Together	55.2 (9.6)	56.9 (9.6)	1.7 [-1.7 – 5.2]	t = -1.01, ns
Disagreement About Finances	53.0 (10.6)	53.8 (10.6)	0.8 [-3.0 – 4.6]	t = -0.40, ns
Sexual Dissatisfaction	52.3 (10.0)	58.4 (11.5)	6.2 [2.3 – 10.0]	t = -3.13*
Role Orientation	55.6 (11.4)	55.5 (8.5)	0.1 [-3.4 – 3.6]	na
Family History of Distress	57.3 (10.4)	56.5 (9.3)	0.8 [-2.7 – 4.3]	t = 0.46, ns
	<i>N=19</i>	<i>N=32</i>		<i>df = 49</i>
Dissatisfaction With Children	53.0 (8.6)	54.2 (11.7)	1.2 [-5.0 – 7.4]	t = -0.39, ns
Conflict Over Child Rearing	56.1 (8.7)	57.5 (11.3)	1.4 [-4.7 – 7.5]	t = -0.46, ns

Note. na = not analyzed ns = not significantly different * p < .01

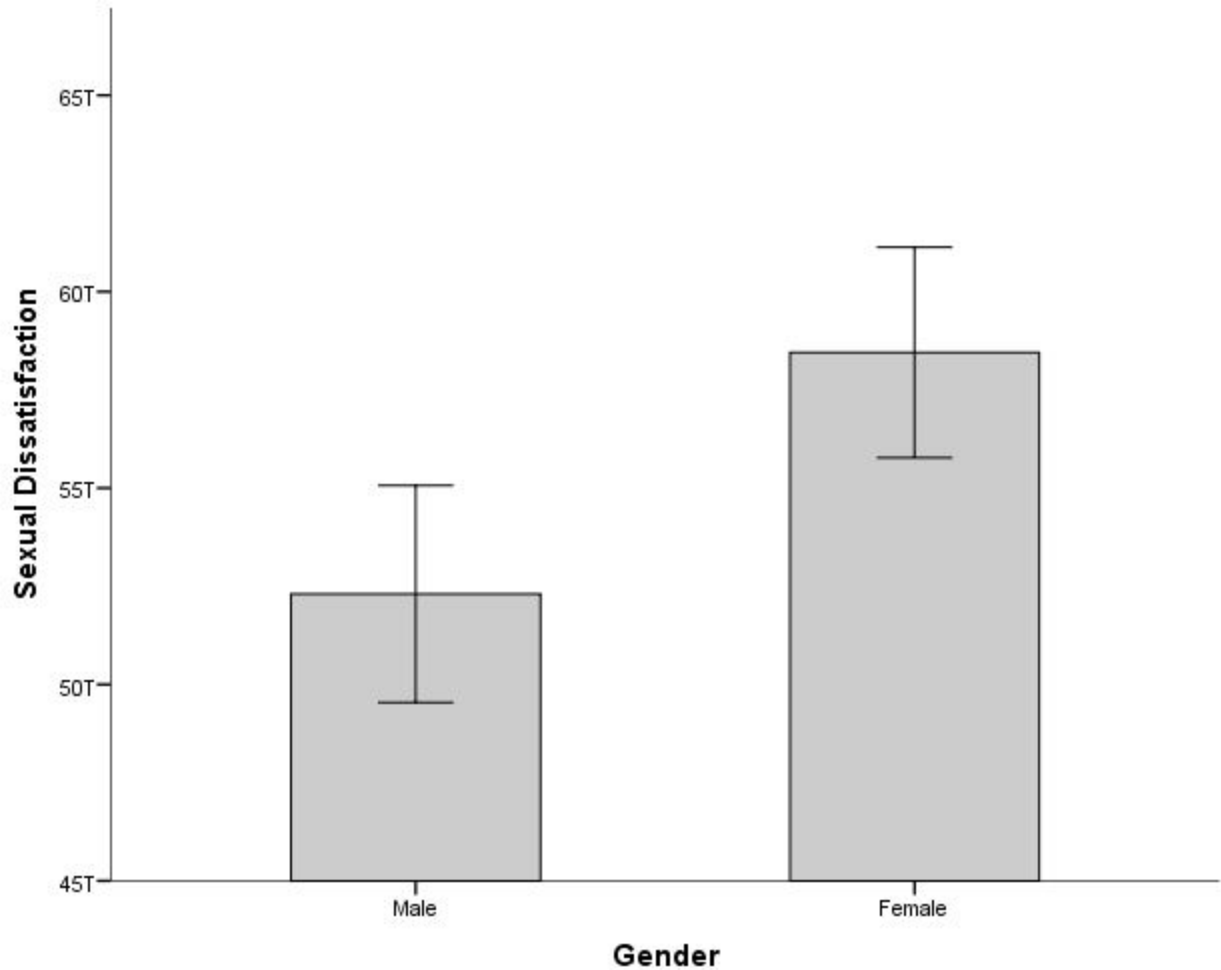


Figure 1. Males vs. Females on the Sexual Dissatisfaction Scale²

Comparison of NT and AS Scores

Another comparison made possible by this data was that of the mean scores of AS/ASD partners within the TS vs. the mean scores of NT partners within the TS. There were not equal numbers of AS/ASD and NT participants, because in some couples, both partners had AS/ASD, and in other couples only one partner decided to participate. The results of this analysis are presented in Table 6.

² For each figure, error bars represent 95% confidence intervals for the given subscale

Table 6

Comparison of NT Test Sample and AS/ASD Test Sample Scores

Subscale	Test	Test	Mean	Comparison
	Sample NT Mean (SD)	Sample AS Mean (SD)	Difference [95% CI]	
	<i>N=54</i>	<i>N=72</i>		<i>df = 124</i>
Global Distress	62.5 (10.3)	58.4 (8.5)	4.1 [0.8 – 7.4]	<i>t = 2.44, ns</i>
Affective Communication	61.2 (8.3)	56.1 (9.4)	5.1 [1.9 – 8.3]	<i>t = 3.15*</i>
Problem-Solving Communication	60.4 (8.6)	55.6 (11.0)	4.8 [1.2 – 8.4]	<i>t = 2.66*</i>
Aggression	57.3 (9.8)	54.5 (9.9)	2.8 [-0.7 – 6.3]	<i>t = 1.59, ns</i>
Time Together	58.6 (9.1)	54.3 (9.6)	4.3 [1.0 – 7.6]	<i>t = 2.54*</i>
Disagreement About Finances	54.3 (9.4)	52.8 (11.4)	1.4 [-2.3 – 5.2]	<i>t = 0.75, ns</i>
Sexual Dissatisfaction	61.2 (9.6)	51.9 (10.8)	9.3 [5.6 – 13.0]	<i>t = 5.01**</i>
Role Orientation	56.5 (8.0)	54.8 (10.9)	1.6 [-1.8 – 5.1]	na
Family History of Distress	55.1 (10.0)	58.1 (9.4)	3.1 [-0.4 – 6.5]	<i>t = -1.76, ns</i>
	<i>N=21</i>	<i>N=30</i>		<i>df = 49</i>
Dissatisfaction With Children	55.0 (11.5)	52.9 (9.9)	2.1 [-3.9 – 8.2]	<i>t = 0.70, ns</i>
Conflict Over Child Rearing	61.4 (11.1)	53.9 (8.8)	7.6 [2.0 – 13.2]	<i>t = 2.72*</i>

Note. na = not analyzed ns = not significantly different * $p < .01$ ** $p < .001$

Scores on the SEX scale were again significantly different between the two groups, in this case AS and NT individuals ($M = 9.31$, 95% CI [5.63, 12.98], $t(124) = 5.01$, $p < .001$).

Scores for Affective Communication (AFC; $M = 5.09$, 95% CI [1.89, 8.29], $t(124) = 3.15$, $p = .002$), Problem-Solving Communication (PSC; $M = 4.80$, 95% CI [1.22, 8.37], $t(124) = 2.66$,

$p = .009$), Time Together (TTO; $M = 4.29$, 95% CI [9.50, 7.63], $t(124) = 2.54$, $p = .012$), and Conflict over Child Rearing (CCR; $M = 7.56$, 95% CI [1.98, 13.15], $t(49) = 2.72$, $p = .009$) were also significantly different at $p < .01$. Global Distress (GDS; $M = 4.07$, 95% CI [.76, 7.38], $t(124) = 2.44$, $p = .016$), although not clinically significant to $p < .01$, was still elevated. Barcharts for these six scales are displayed in Figures 2 through 7. Barcharts for the remaining scales appear in Appendix F.

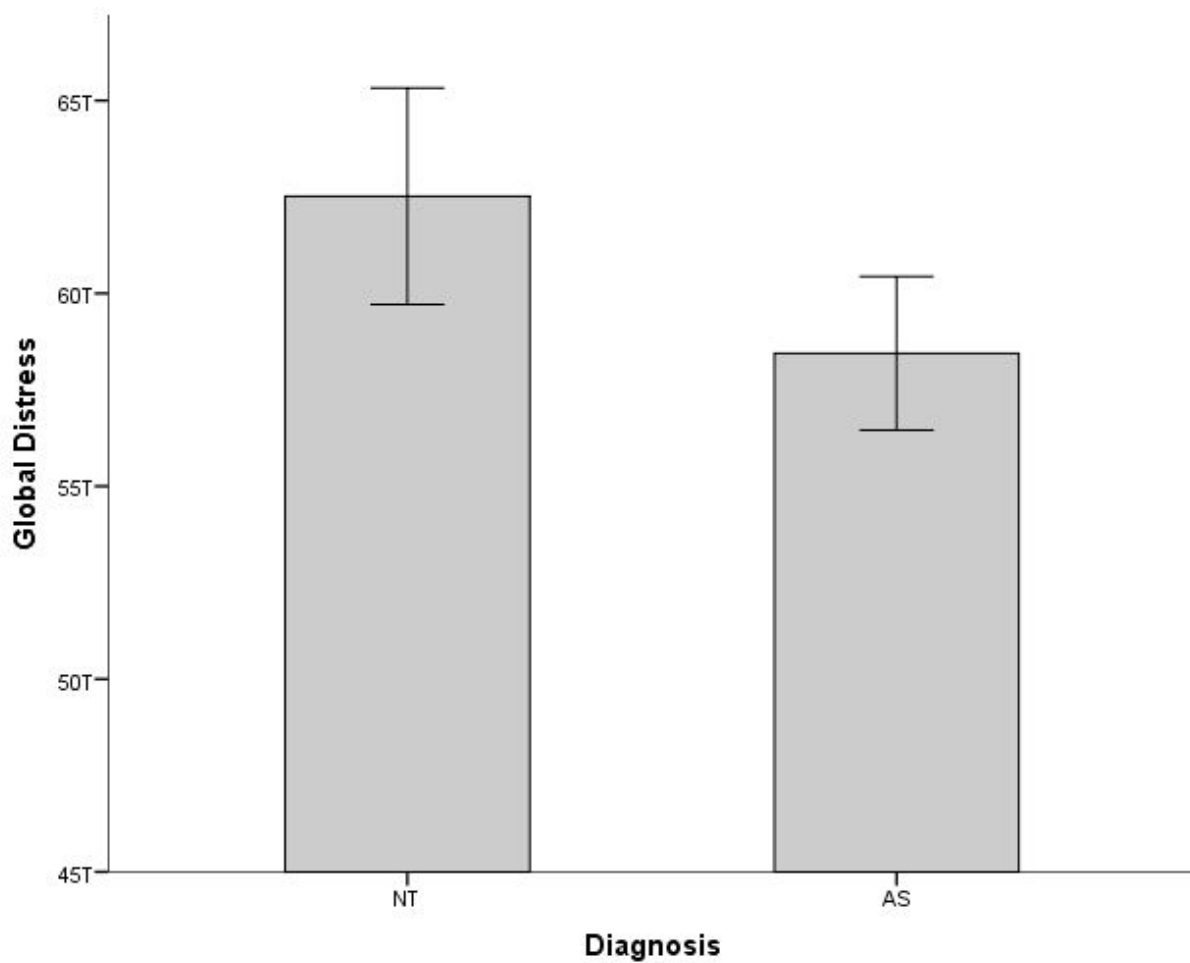


Figure 2. NT vs. AS/ASD Individuals on the Global Distress Scale

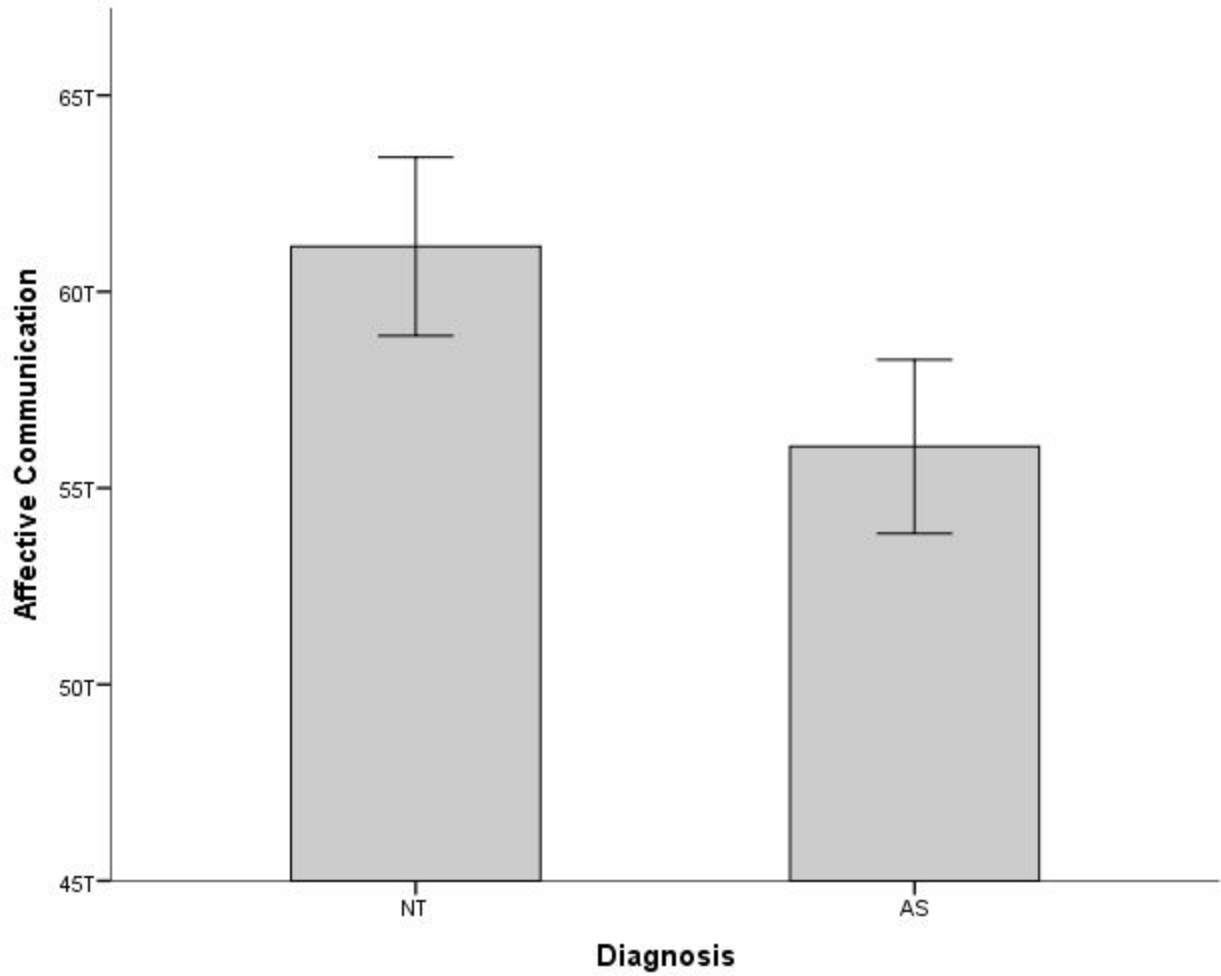


Figure 3. NT vs. AS/ASD Individuals on the Affective Communication Scale

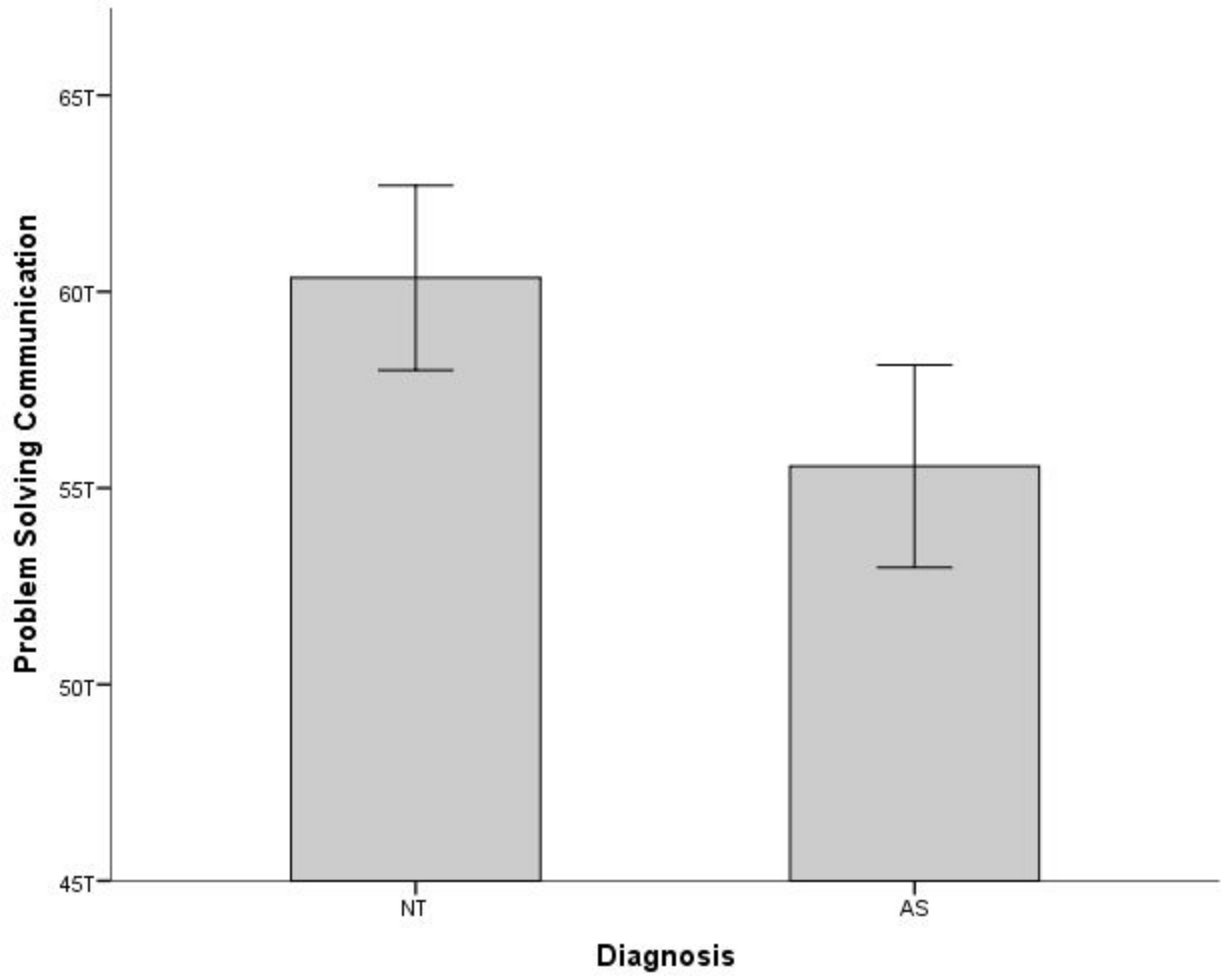


Figure 4. NT vs. AS/ASD Individuals on the Problem-Solving Communication Scale

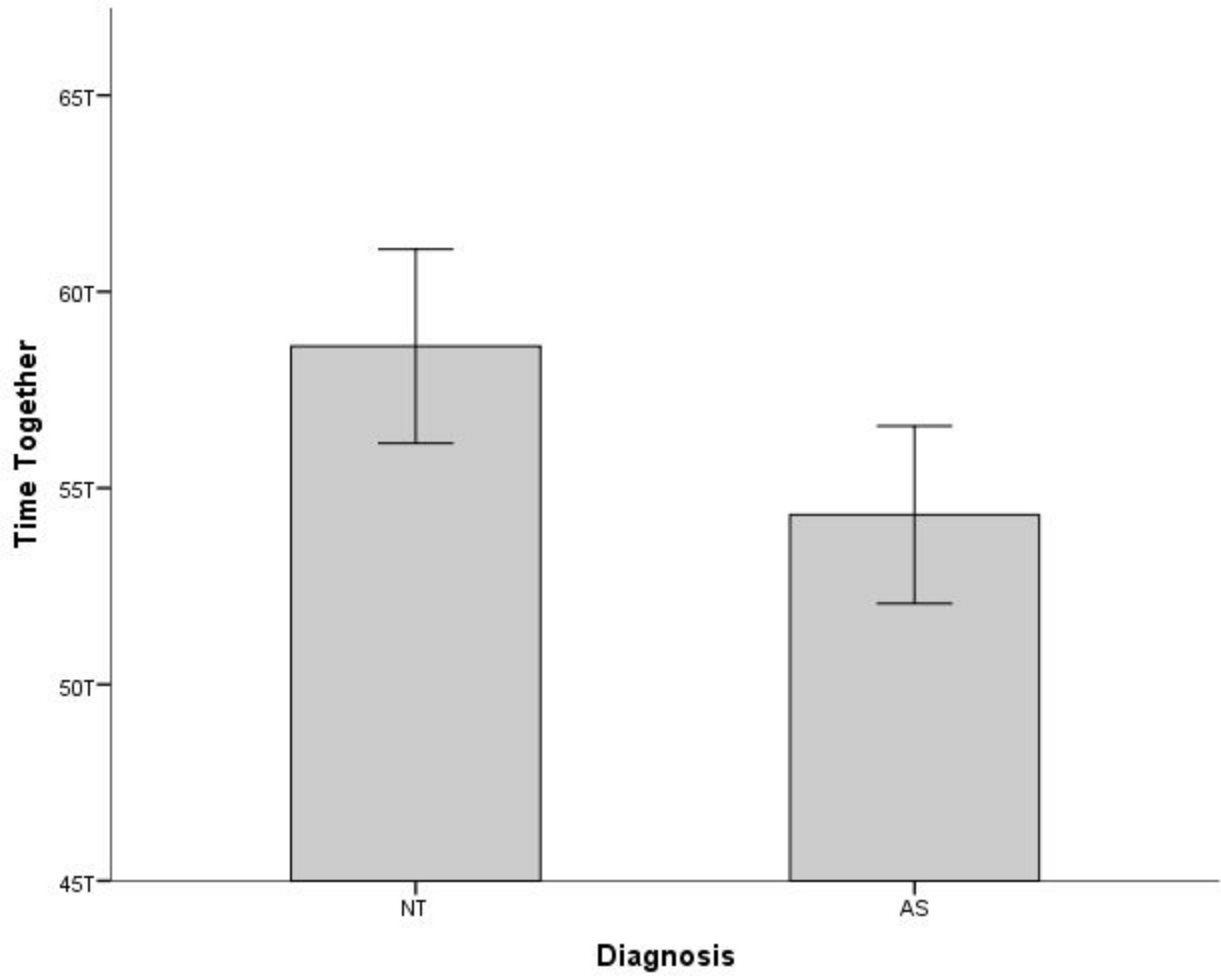


Figure 5. NT vs. AS/ASD Individuals on the Time Together Scale

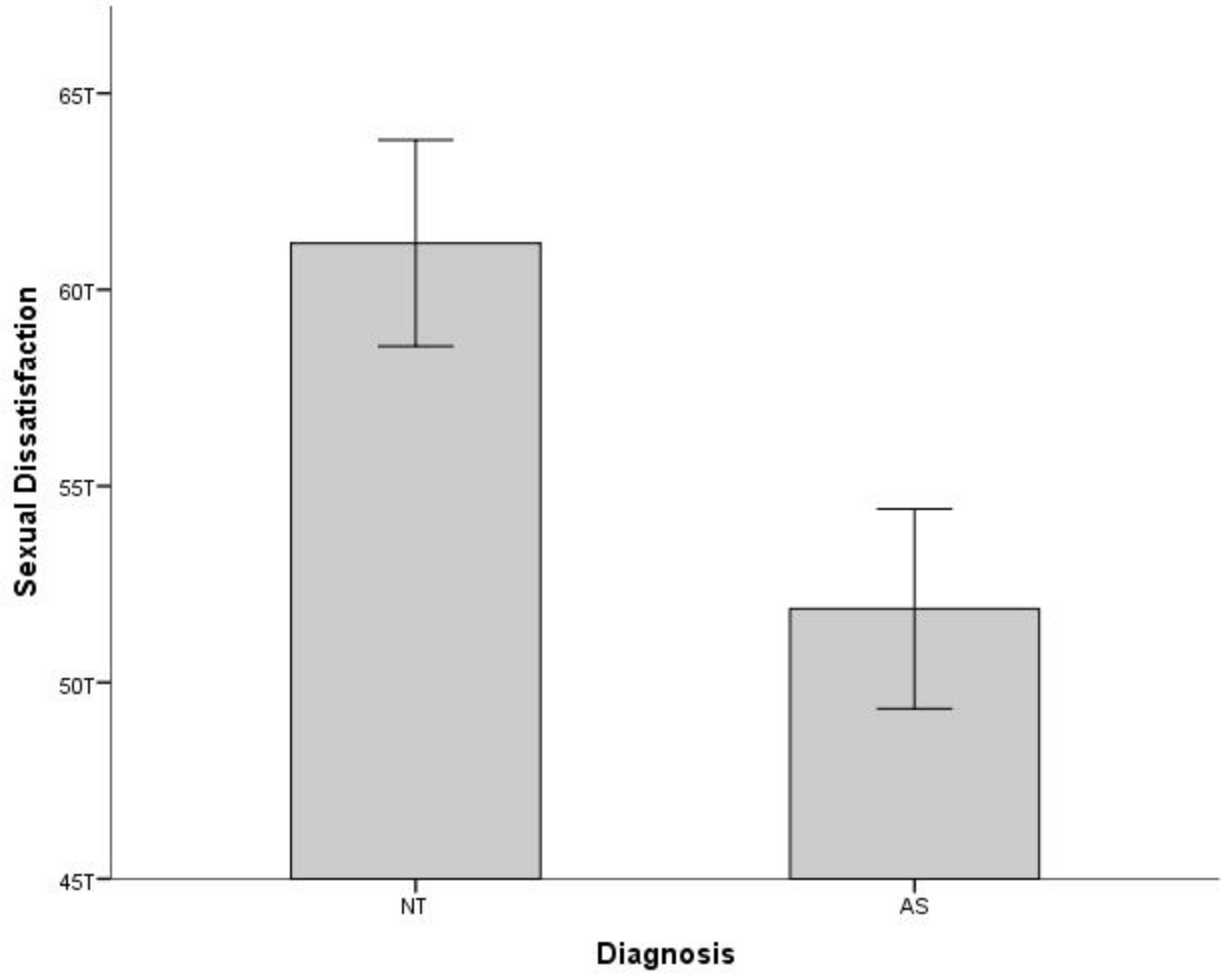


Figure 6. NT vs. AS/ASD Individuals on the Sexual Dissatisfaction Scale

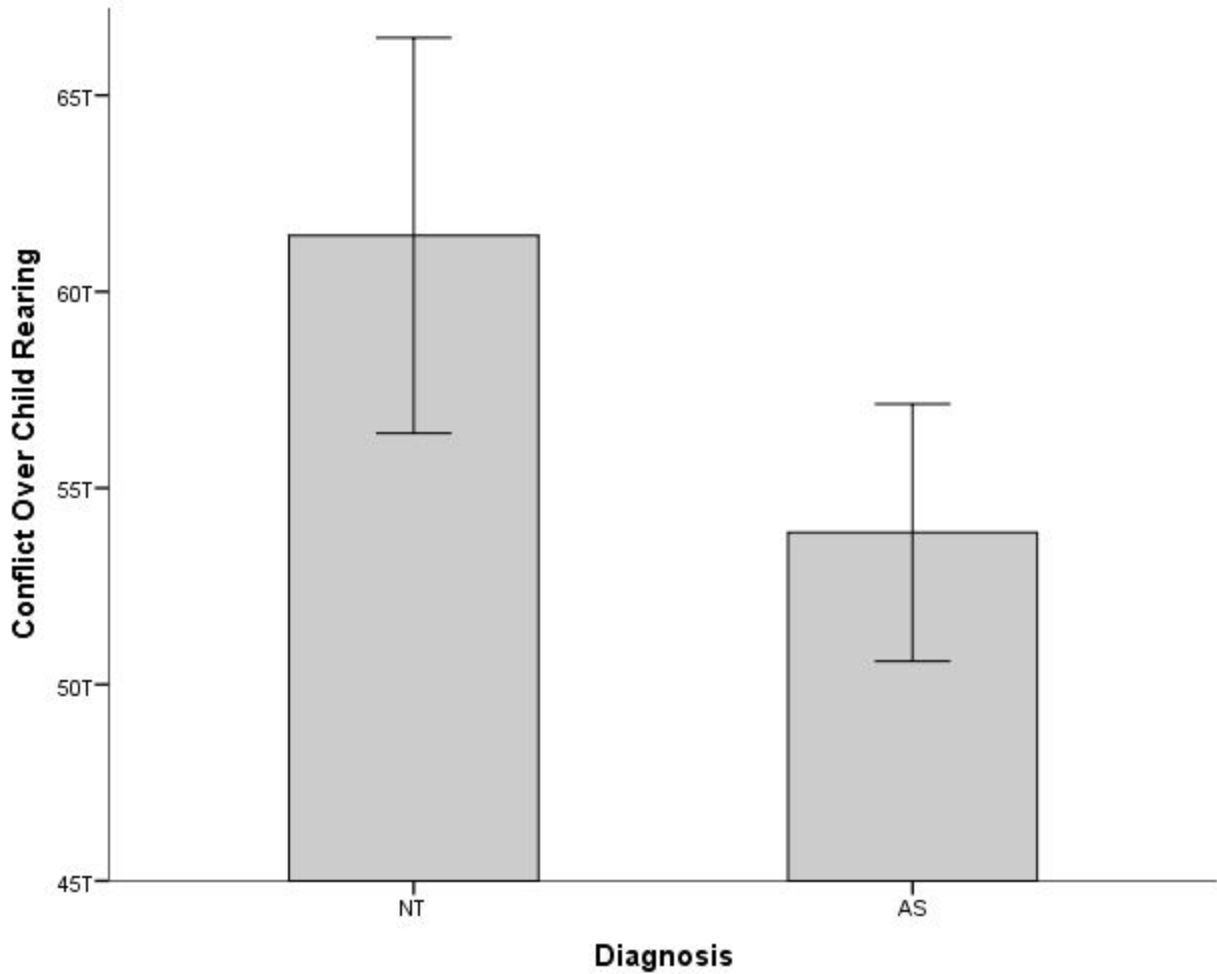


Figure 7. NT vs. AS/ASD Individuals on the Conflict Over Child Rearing Scale

Interpartner Correlation

Snyder (2004) published the correlation between partners for each subscale of the MSI-R's normative data sample. Table 7 reports these findings alongside interpartner correlations for the test sample, and a comparison of the two correlations with each other (Preacher, 2002). For the test sample, N=90 rather than the total sample size of 126 because for some couples, only one partner chose to participate.

Table 7

Interpartner Correlations

MSI-R Scale	Normative Sample (N=2140)	Research Sample (N=90)	Comparison ³
Conventionalization (CNV)	.63	.46	$z = 2.23$, ns
Global Distress (GDS)	.75	.57	$z = 2.95^*$
Affective Communication (AFC)	.60	.64	$z = -0.60$, ns
Problem-Solving Communication (PSC)	.73	.65	$z = 1.40$, ns
Aggression (AGG)	.53	.37	$z = 1.84$, ns
Time Together (TTO)	.67	.55	$z = 1.78$, ns
Disagreement About Finances (FIN)	.66	.53	$z = 1.85$, ns
Sexual Dissatisfaction (SEX)	.49	.09	$z = 4.07^{**}$
Role Orientation (ROR)	.58	.73	$z = -2.43^*$
Family History of Distress (FAM)	.14	.04	$z = 0.92$, ns
Dissatisfaction With Children (DSC)	.58 ⁺	.10 ⁺⁺	$z = 2.99^*$
Conflict Over Child Rearing (CCR)	.65 ⁺	.66 ⁺⁺	$z = -0.93$, ns

Note. Sample tables from the *Marital Satisfaction Inventory, Revised (MSI-R)* copyright © 1997 by Western Psychological Services. Reprinted by K. Bolling, Antioch University New England, for scholarly display purposes by permission of the publisher, WPS, 625 Alaska Avenue, Torrance, California 90503, U.S.A. Not to be reprinted in whole or in part for any additional purpose without the expressed, written permission of the publisher (rights@wpspublish.com). All rights reserved.

na = not analyzed ns = not significantly different * $p < .01$ ** $p < .001$
⁺n=1460 ⁺⁺n=32

³ Software used to compare the correlation coefficients was written by Preacher (2002).

Discussion

Details of Findings

Why were AS couples so much less satisfied than the normative sample? The hypothesis of this study was that the relationship satisfaction of individuals in romantic partnerships in which one member has AS/ASD would be different from the relationship satisfaction of individuals in romantic partnerships in the general population. To support or refute this hypothesis, mean scores from the Test Sample (TS) were compared with those of the Standardization Sample (SS) of the MSI-R. Results showed that multiple dimensions of marital satisfaction were significantly higher for the TS than the SS, indicating that there is more distress for individuals in AS/ASD-affected relationships. None of the TS scores demonstrated better marital adjustment than the SS. Almost all of the differences were significant at $p < .001$. These dramatic results suggest that there is a great deal of distress in neurotypically mixed marriages, for both the NT and the AS/ASD partners. These findings are not entirely surprising given the known differences between AS/ASD and NT individuals. However, the findings do contradict two previous studies conducted by Lau and Peterson (2011) and Pollmann et al. (2010), that found no association between a partner's AS/ASD status and marital satisfaction.

For males in this study, seven out of ten scales were clinically significantly different from the normative data. Females differed significantly on nine out of the ten scales. The only scale that was not significantly different across both genders was (dis)satisfaction with children, meaning that average scores for participants in this study with respect to this domain were similar to the normative averages.

Prior to implementing the study, I made no prediction about global distress scores. Some common AS/ASD traits such as those that contribute to clarity and consistency might be assets in

a relationship rather than liabilities, resulting in higher overall satisfaction. However, because AS directly affects social interaction, higher global distress scores make intuitive sense. Reis (2007) notes that perceived partner responsiveness, likely to be lower than average in neurotypically mixed relationships, is a central organizing principle in relationship satisfaction. This study is not able to determine causation, but the negative association between global distress and the presence of AS/ASD in one of the partners is clear.

For both men and women, mean scores on the Affective Communication (AFC) scale were significantly higher (indicating greater distress) than the normative sample. This may be related to some of the common characteristics of AS, including lack of spontaneous sharing and lack of social/emotional reciprocity. For Problem Solving Communication (PSC), I anticipated that scores would be different for AS/ASD-affected relationships than in the general population, but I did not make a prediction as to the direction of the difference. AS/ASD individuals tend to be literal and efficient in their verbal interactions, possibly bringing the strengths of focus and specificity to their approach to problem solving. However, difficulty with communication in general could have been a factor in higher mean scores. Regarding Time Together (TTO), given the well-documented tendency of AS/ASD individuals to spend time alone (e.g., Attwood, 2007), I anticipated that the mean scores on this scale would be significantly higher for AS/ASD-affected couples than those of the standardization sample, as they were.

Several publications state that AS individuals may develop anger problems and eventually aggressive behaviors (e.g., Attwood, 2007; Gaus, 2007), possibly due to difficulty regulating emotions and/or a limited repertoire of responses to conflict. There is a common perception, sometimes bolstered by clinical case studies (e.g., Baron-Cohen, 1988), that AS individuals are predisposed to criminal behaviors (Allen et al., 2008). In her own research, Aston

(2003) relates that 40% of AS men reported having been physically aggressive toward their partners at least once. Nonetheless, the prevalence of aggression in AS/ASD individuals compared with the prevalence in the general population, or even in a clinical population, is unknown (Singh et al., 2011). Furthermore, based on their literature review, Ghaziuddin, Tsai, and Ghaziuddin (1991) assert that AS individuals may act violently *less* frequently than NT individuals. This suggestion is consistent with the observation that AS individuals are “gentle, reliable, and vulnerable” (Attwood, 2002, p. 9). In keeping with the latter body of evidence as well as my own clinical experience working with AS couples, I anticipated that the mean Aggression (AGG) scores of participants in this study would be significantly lower than the means of the standardization sample. The outcome, that AGG scores were significantly worse in the TS sample than the SS sample, was not what I had anticipated, and perhaps relates to reasoning put forth in the previously cited publications. Snyder and Snow (1995; as cited in Snyder, 2004) found that the AGG scale did not distinguish between physically abusing and non-abusing men. This lack of distinction may also help explain the higher scores on the AGG scale.

Mean scores for difficulty with finances (FIN) were elevated only for women. Some factors that could influence AS couples’ contentment about financial matters within the relationship include an AS/ASD partner spending money on circumscribed interests, or an AS/ASD partner being meticulous with money management. Common AS difficulties with touch and other sensory issues (e.g., Stanford, 2003), led me to anticipate a higher mean score on the SEX scale for AS/ASD relationships compared with the normative sample. Interestingly, this scale was elevated only for women. Any rationale for why this is so would be purely speculative. However, because AS/ASD is more prevalent in men than women (National Library of

Medicine, 2013), future studies could more deeply investigate the sexual satisfaction of AS/ASD men.

Because the focus of this study was adults and their satisfaction with their romantic relationships, the family history of distress (FAM) and dissatisfaction with children (DSC) scales were not as pertinent as other scales and were not discussed in detail. The role orientation scale (ROR) was also not discussed. The distribution of the ROR data was non-normal. Because it is not a measure of distress but rather assists in giving context for overall profile interpretation, more useful for clinical work than for research, the ROR was not analyzed.

Much of the literature on parenting in an AS-NT relationship indicates that the NT partner tends to do more of the parenting than the AS/ASD partner. As Aston (2003) states, “Many NT women complained that they were the ones who took all the responsibility for the childcare and rearing of the children and this was true in most situations” (p. 1036). John Elder Robison, an author who has AS, experienced this in his own marriage: “I worked a lot while Cubby was small, and I left many of the kid management decisions up to Little Bear. She stayed home with him, and she deserves all the credit for his basic training” (Robison, 2008, p. 225). Imbalances in responsibility for child care could potentially cause conflict over child rearing. Further, several of the questions on the conflict over child rearing scale (CCR) have to do with a partner’s affection towards the children and joint decision-making, behaviors that tend to be lower in AS/ASD individuals. Thus I anticipated that the mean scores on the CCR scale for this study would be significantly higher for the TS than for the SS, as they were for both men and women. Numerous studies show that parents are negatively affected when they have an AS/ASD child (e.g., Lau & Peterson, 2011). Because AS/ASD tends to run in families, it is possible that some of the AS individuals who answered the child-related questions have an AS/ASD child.

This is another factor that could have contributed to higher CCR scores.

Because most of the noteworthy results in this study were significant at $p < .001$, it was not meaningful to rank them or to pinpoint weaknesses in one domain of satisfaction for this population relative to another. I had hoped that results would show more variation in differences, either in a positive or negative direction, than they did.

Within AS/ASD-affected relationships, NT partners are less satisfied. For this study, all participants either had a diagnosis of AS/ASD or were in a relationship with someone who did. To make full use of the data collected, means for different groups within the TS sample were compared. The first of these comparisons was between male vs. female respondents on the content subscales of the MSI-R excluding the ROR scale. Each group, males and females, included a mix of both NT and AS/ASD individuals. In this comparison, the only scale that was significantly different was the sexual dissatisfaction (SEX) scale, with females being substantially more dissatisfied than males.

Perhaps even more interesting were the results of the comparisons made between NT and AS/ASD individuals within this study sample. NT and AS/ASD individuals within the TS differed significantly from each other on their satisfaction in five out of ten dimensions of marital adjustment. In all cases scores for NT individuals revealed that they were more distressed than their AS/ASD counterparts. The five scales that showed significant differences were: affective communication (AFC), problem-solving communication (PSC), time together (TTO), sexual dissatisfaction (SEX), and conflict over child rearing (CCR). It is interesting to note that these five scales correspond almost exactly to the scales that I anticipated would be higher than the comparison data, prior to conducting the study. Perhaps for distressed couples in a neurotypically mixed relationship, these five scales represent primary domains of difference, an

hypothesis that corresponds with known characterological differences between NT and AS/ASD individuals.

In their meta-analysis of NT-AS relationship studies, Bostock-Ling et al. describe at length the difficulties that some female NT partners experience when in relationships with AS/ASD individuals. It is unclear if NT males in relationships with AS/ASD partners also experience such distress. Bostock-Ling et al. (2012) report that:

Some female NT partners experience a decline in mental and physical health, wellbeing and quality of life, which they attribute to the symptom expression of their partner's AS. Feelings of loneliness, confusion, frustration, isolation and, at times, of "going insane" are reported, as are disorders of mood (e.g., depression and anxiety), problems with sexual intimacy and sexual activity... Reports that the NT-AS intimate relationship is marred by the unwillingness or inability of their partner to engage in shared activities, to provide appropriate emotional support, to effectively communicate, to reciprocate, or to be spontaneous or flexible in their beliefs and behaviours and to learn from their mistakes, seem commonplace. (p. 96)

Numerous publications, websites, and forums describe this same phenomenon (e.g., AS Partners, 2014; Aspergated Wives, 2014; Newton, 2011; Thompson, 2008), often called the "Cassandra Disorder" as described above. Partners or former partners of AS/ASD individuals who have experienced these symptoms have proposed recognition of new disorders such as *Ongoing Traumatic Relationship Syndrome* (FAAAS, 2010) or *Affect Deprivation Disorder* (Aston, 2014). These concepts, however, have generated a great deal of controversy as they may imply that AS/ASD individuals are not suitable spouses or parents, and/or inadvertently support perpetrators of domestic violence against disabled individuals because of an assumption that the

disabled person is always at fault (e.g., Autistic Self Advocacy Network, 2009).

Within AS relationships, interpartner correlations are low. Scales of aggression, sexual dissatisfaction, family history of distress, and dissatisfaction with children all showed weak interpartner correlations ($r < .50$) in the TS. This would imply that partners in the TS differed from each other in their perceptions of these three components of a relationship: aggression, intimacy, and satisfaction with their children.

The comparison of interpartner correlations for the SS vs. the TS revealed significant differences in four of the content subscales: global distress, sexual dissatisfaction, role orientation, and dissatisfaction with children. Global distress was more highly correlated between partners in the SS than in the TS. On the sexual dissatisfaction scale, the SS interpartner correlation was close to .50, while the TS was .09, a difference that is significant at $p < .001$. Differences of similar magnitude were observed in interpartner correlation on dissatisfaction with children. These large differences suggest that partners in this study felt a greater disparity from one another in these domains (SEX and DSC) than did the partners in the standardization sample. Since research suggests that AS/ASD individuals do not lack relational awareness, systematic lack of awareness on the part of one partner would not help explain such discrepant scores. One issue that could contribute to discrepancies in distress level between partners is communication. Based on existing literature, previous research, and the results of this study, communication in AS/ASD-affected relationships is problematic. Miscommunication could contribute to both sexual dissatisfaction and disagreement over child rearing by affecting such factors as schedules, personal preferences, and individual goals. Less reliance on one's intimate relationship could similarly contribute to discrepancies, by affording less opportunity for the partners to support and respond to one another, to deepen their intimacy, or to work out

disagreements.

Comparison with prior research. Of three previous studies that analyzed marital satisfaction and adult neurotypically mixed relationships, two of them found no association between marital satisfaction and AS/ASD traits in the participants' partners, while the third did. All three are discussed below.

In "Adults and Children with Asperger Syndrome: Exploring Adult Attachment Style, Marital Satisfaction and Satisfaction with Parenthood," Lau and Peterson (2011) focused primarily on attachment style. This study used a clinical sample and a control group, but the method of subject recruitment was not clear. Lau and Peterson found no association between AS/ASD diagnosis and marital satisfaction of either the self or the partner. The researchers expressed surprise over this lack of association, and speculated that factors such as the NT partner having a particularly secure attachment style, and/or the positive qualities of AS individuals such as loyalty and intelligence, may have moderated a negative association between AS/ASD status and partner satisfaction.

The second study that had discrepant findings from the current study, "Mediators of the Link Between Autistic Traits and Relationship Satisfaction in a Non-Clinical Sample" (Pollmann et al., 2010), differed from the current study in several key ways. Pollmann et al. did not use a clinical sample, but rather measured the BAP, or level of autistic traits, in their participants. The subclinical population may not be as strongly affected by the presence of AS/ASD traits in their relationships as is the clinical population. Another possible factor in the discrepancy of findings is that Pollmann et al. were studying newly married couples, with an average relationship length of 10 months. Younger relationships may differ from more mature relationship in dimensions and levels of marital adjustment.

In contrast, “Individual and Marital Adaptation in Men with Autism Spectrum Disorder and Their Spouses: The Role of Social Support and Coping Strategies” (Renty & Roeyers, 2007) did show a strong negative association between marital satisfaction and the AS/ASD status of a partner. This finding is consistent with that of the current study. There were several important similarities between the two. One notable similarity was the method of recruitment of subjects. Renty and Roeyers recruited couples through advertisements and notices in newsletters of two organizations related to AS/ASD. This method was almost identical to that used by the current study, differing primarily in the number and variety of organizations involved. Renty and Roeyer’s sample was a clinical one, requiring an AS/ASD diagnosis for the men. Further, they studied mature relationships, with a minimum length of one year.

Clinical Implications

The dramatic results of this study suggest that neurotypically mixed relationships are in great need of attention. Although it appears that there are no intervention studies for AS/ASD-affected couples treated in couples counseling, Renty and Roeyers (2007) found that formal supports, such as counseling, were not associated with higher levels of marital satisfaction. In contrast, informal supports, such as involvement in community organizations and strong relationships with extended family members, have been shown to positively affect marital adjustment (Pollmann et al., 2010; Renty & Roeyers, 2007). In keeping with the idea of informal supports, Karen Rodman (FAAAS, 2013) has advocated for an approach entitled “SALVE” (Support, Assistance, Listening, Validating, Education) specifically designed for NT women married to AS men. Since perceived partner support is associated with higher levels of relationship satisfaction, perhaps counseling those in neurotypically mixed relationships should include coaching to improve supportive skills for both partners, such as learning how to respond

effectively to a partner's distress (Renty & Roeyers, 2007).

Because the number of couples affected by AS/ASD is likely to be higher than previously thought, and because such couples are likely to be highly distressed, screening measures during couple intakes may be helpful in guiding the therapist toward appropriate case conceptualization, interventions, and recommendations. Measures of the BAP as described above could alert a therapist to higher levels of AS/ASD traits in one or both partners, thus informing the treatment approach(es).

Communication and time together are two of the aspects of marital satisfaction that correspond with known differences between AS/ASD and NT individuals. Common marital counseling recommends spending more time together, which may not be realistic or as comfortable for the AS/ASD partner. Finding alternative ways to enjoy time together, such as going to the movies where no communication is expected, or encouraging the NT spouse to appreciate "parallel play" as a form of time spent together, could prove helpful.

As previously noted, AS/ASD individuals tend to spend less time than their partners in child rearing activities. Creating systems to concretely divide the burden and involve both parents, such as one parent overseeing educational needs while the other focuses more on medical needs and appointments, could alleviate the burden on the NT partner while increasing the connection between the AS/ASD partner and the children. Both results would likely have a positive effect on marital satisfaction.

In marital counseling of neurotypically mixed couples, the NT person is often asked to make most of the accommodations because it is assumed that the AS/ASD individual cannot. This is unfair to both partners in that it overburdens one while demeaning the other. Michelle Garcia Winner (2014) has devised an intervention for individuals with social skills deficits called

Social Thinking. This approach has garnered some evidence for its effectiveness in helping individuals to anticipate future events (Crooke, Hendrix, & Rachman, 2008). Rather than trying to coach an AS/ASD person to memorize an infinite list of social rules, Social Thinking supports the development of core theory of mind skills. Thus possibilities for change for both partners in a distressed NT/AS relationship exist.

Other possibilities for the AS/ASD partner to make adjustments that could increase marital satisfaction also exist. NT partners may feel badly if their AS/ASD partner does not remember to call them during the day or does not think to give them a hug when they get home from work. Such behaviors on the part of the AS/ASD partner may be a function of monotropism rather than lack of caring. Strategies used by individuals with ADHD, such as setting reminders and use of timers and notes around the home, could help an AS/ASD partner to include rituals meaningful to their spouse into their everyday lives.

Finally, many argue that viewing AS/ASD as a deficit model is insulting because it assumes that the set of characteristics of a minority is inferior to those of the majority (e.g., Autism Network International, 1993; Baron-Cohen, 2002). Undoubtedly, most couple therapies are designed with the implicit assumption that NT traits are preferable while AS/ASD traits are problematic. Perhaps a perspective that includes AS/ASD traits as valid alternatives could yield more effective marriage counseling strategies for AS/NT partnerships in distress. For example, neurotypical couples are often plagued by a problem-solving focus in which one partner wants to vent frustrations unrelated to the relationship and the other responds by suggesting solutions. This can cause a feedback loop in which both partners become frustrated, the former by not feeling heard and the latter by the perceived resistance to finding solutions. AS individuals are characteristically nonjudgmental and may have difficulty making decisions. These attributes

could help an AS partner to build active listening skills without the unwanted problem-solving tendency, perhaps more effectively than an NT partner could.

Limitations

This study was not intended to show causality. Rather, my hope was that this study would help to discern component strengths and weaknesses of neurotypically mixed relationships by inspecting comparisons of the mean scores on the rich subscales of the MSI-R.

A significant difficulty in studying this population is obtaining a representative sample. As in any situation, individuals who respond to questionnaires may feel more strongly than those who do not choose to respond. While researching organizations to approach to ask for help in publicizing this study, I found a remarkable variety of cultures and philosophies among the different groups. Great attention was given to ensuring a variety of sources for this study, with the hope that it would minimize bias in the data. Many of the organizations I worked with stated their mission to be that of helping people on the spectrum and their families to enhance the quality of their lives (e.g., AANE, 2014c). Others were resource guides that reach a large audience (Attwood, 2013). Still others were charitable organizations also seeking to enhance the quality of life for those on the spectrum (e.g., Autism Society Canada, 2014; The National Autistic Society, 2014) and autism advocacy groups (e.g., GRASP, 2014).

In contrast, some of the websites were meant specifically to provide information and support for partners and family members of AS/ASD individuals rather than the individual him/herself (e.g., FAAAS, 2013; Newton, 2011). Some of the forums were open to AS/ASD individuals and their partners and encouraged open dialog (e.g., AS And Relationships That Work Differently, 2014; ASPIRES, 2013). Other forums were limited to current or former partners of someone with AS/ASD, with varying degrees of anger and frustration expressed by

their members (e.g., AS Partners, 2014). I made a deliberate decision to approach fewer of the websites or forums that excluded AS/ASD partner participation, for fear of introducing bias into the data. However, given the large number and size of such groups, it seems likely that there are many individuals for whom an intimate relationship with an AS/ASD partner does not work. Including more of those groups may actually have lessened the bias.

Many of the individuals who contacted me suspected that they or their partner had AS/ASD, but did not have a diagnosis. They were not included in the study because they did not meet the study criteria, which were meant to keep the independent variable of diagnosis clearly operationalized. However, it is likely that many of the individuals in these couples would in fact have met criteria for a diagnosis of AS/ASD. Many people who inquired about participating told me that their suspected AS/ASD partner would not agree to an assessment. Thus, the requirement for a confirmed diagnosis may have also introduced bias into the data, eliminating some who would have met criteria for a diagnosis but did not want to pursue assessment.

Future Directions

It is clear that adult AS/ASD relationships are underrepresented in the literature. Further, the number of adults who have AS/ASD and are in relationships seems to be highly underestimated. Some studies are looking at the BAP, an individual's displayed level of autistic traits, rather than limiting participants to those with a diagnosable condition. This approach would be consistent with the view of ASD as a continuum. Future research could span the clinical demarcation, such that it includes both clinical and subclinical levels of BAP in the same study, with matched controls. This approach would be more generalizable, and harmonious with the dozens of additional inquiries I received from individuals in neurotypically mixed relationships where there was no formal diagnosis.

The number of online forums, electronic mailing lists, and websites devoted to supporting individuals in a romantic relationship with an AS/ASD partner suggests that there are many neurotypically mixed relationships that are in distress. While such relationships may or may not be representative of all AS/ASD-affected relationships, effective help for those that are highly dissatisfied in their relationships is lacking. Outcome studies of different types of interventions would be extremely helpful in educating those who work with such couples. Observational studies could also be helpful in deciphering the factors that enhance or detract from relationship satisfaction.

It is interesting to note that the MSI-R does not assess any aspects of trust. Trust itself has a variety of subdomains including reliability, loyalty, fidelity, and anticipation of supportive responding, many of which are positively associated with AS/ASD. Simpson (2007) notes that trust is an integral part of satisfying relationships. Assessments that measure other known factors in relationship satisfaction, such as trust, responsiveness, and perceived spousal support, could prove useful in characterizing neurotypically mixed relationships. None of those factors were assessed in this study.

Summary

Results from the current study show that individuals in NT-AS/ASD partnerships report greater levels of distress in their relationship than do those in a relationship that is not neurotypically mixed. Dozens of books, websites, and support groups assert that AS/ASD relationships are challenging for both partners. Quantitative research on this topic is limited, and results from previous studies are mixed. However, all agree that treatment-as-usual for distressed, neurotypically mixed couples is ineffective at best. The challenge for these couples and for those who try to help them is to honor everyone affected as individuals with valid

experiences. Solutions must be respectful to both partners.

AS/ASD is prevalent in the population, and many adult AS/ASD couples exist, whether diagnosed or not. By examining multiple aspects of marital satisfaction, this study was intended to provide a detailed view of the nature of such couples' distress, with the hope that it might inform upcoming research and/or inspire more effective treatment strategies in the future.

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[ORTAL](#)

Appendix A

Recruitment Website

Asperger's Syndrome / Autism Spectrum Disorder and Marital Satisfaction

The purpose of the study is to examine the marital adjustment and satisfaction of couples in which at least one partner has Asperger's Syndrome (AS) or Autism Spectrum Disorder (ASD). Adult couples of any age and sexual orientation, with or without children, are invited to participate. Our hope is that this study will contribute to the body of scientific knowledge about the strengths and stressors of neurologically mixed couples, with the goal of improving the relationships of those with AS or ASD and their loved ones.

Participation involves completing an online survey at your convenience, and should take no more than 20-30 minutes to complete. Your responses will be completely anonymous.

To participate in this study you must be over 18 years old and:

- In a relationship in which at least one partner has a confirmed diagnosis of Asperger's Disorder (Asperger's Syndrome) or Autism Spectrum Disorder
- You and your partner must be either married or living together for at least 6 months.
- Participants must be able to read and understand English.

If possible, it is preferable for both members of the couple to participate in the study. Each partner would complete the survey separately and all information is anonymous.

To participate, please contact the principal investigator with any questions, or for a password and link to the survey, at:

<mailto:researchAS@rkkacentral.com>

Appendix B

Short Advertisement

Are you or your partner/spouse on the autism spectrum? Researchers at Antioch University New England are conducting a study of marital adjustment of couples in which at least one partner has Asperger's Syndrome or Autism Spectrum Disorder. We hope that this study will help identify strengths and stressors of neurologically mixed couples, with the goal of enhancing the relationships of adults on the spectrum and their partners.

Participation involves completing an online survey and should take no more than 20-30 minutes to complete. Responses are completely anonymous.

For more information, or to request a password and link to the survey, please contact the principle investigator at ResearchAS@rkkacentral.com or kbolling@antioch.edu. You can also check our website for more information: <http://www.rkkacentral.com/ResearchAS>

We greatly appreciate your interest. Participants will be offered \$5 gift cards to either iTunes or Amazon.

Appendix C

Participant Information Letter

Dear <First Name>,

Thank you for your interest in participating in our study. Below is the information you will need to begin. To thank you for your time, we would like to offer you a \$5 gift card to either iTunes or Amazon. Please email me with your preference, and the card will be sent to you electronically.

PURPOSE

The purpose of this project is to better understand the relationships of couples affected by Asperger's Syndrome (AS) and Autism Spectrum Disorder (ASD). You have expressed interest in participating in this study. This email gives you the information you will need to decide whether or not to participate. If you decide to participate, instructions are included on how to begin.

IF YOU DECIDE TO PARTICIPATE

You will be directed to an online survey about couple satisfaction. The survey is expected to take approximately 20-25 minutes. No special software is required other than an internet connection and a web browser.

BENEFITS AND RISKS

Completing this survey may increase your awareness of certain aspects of your relationship. You may experience this awareness as helpful or uncomfortable. We do not foresee any additional risks from participating in this research project. If participation in this project does increase your anxiety or cause any emotional or marital distress, you may contact the principal investigator for assistance in locating a local provider of mental health assistance and/or couples counseling.

YOUR PRIVACY

Survey questions will not ask you to identify yourself, so there is no way that I or anyone else will be able to link survey responses to identifiable people. All data is stored in a secured and anonymous manner. Results will be reported in summary form only.

VOLUNTARY PARTICIPATION

Taking part in this research project is voluntary. You may choose not to take part at all. If you agree to participate in this study, simply complete the online survey. You may stop participating at any time by exiting the survey, and your results will not be saved.

TO BEGIN

Please open your browser and go to the following address: <www.xxxx.com>

Or click on this link: <link to survey start page>

The password to access the survey is: <password>

Your Couple ID number is: <#####>

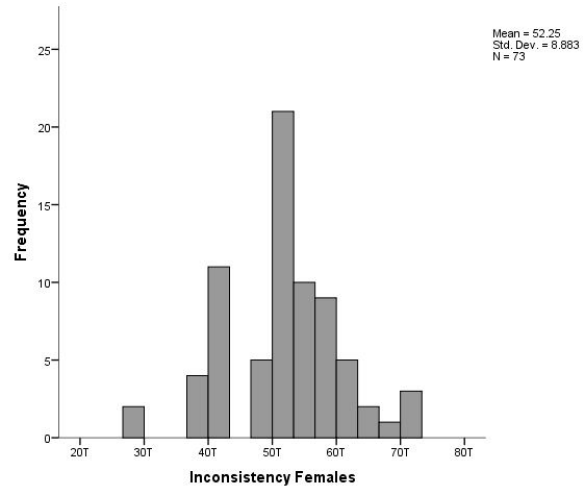
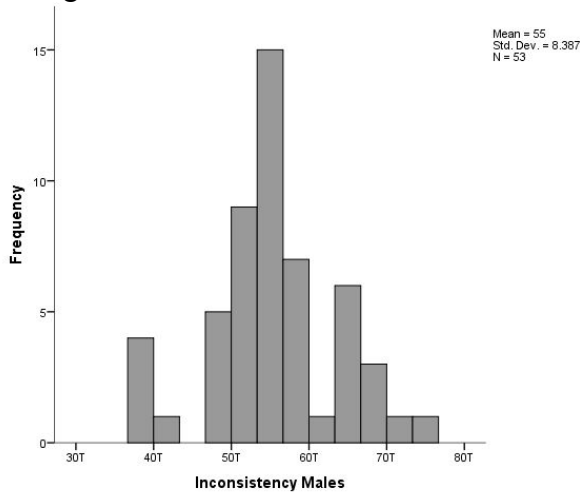
QUESTIONS

Questions are encouraged. If you have any questions about this research project, please contact: Kim Bolling, MS, at 1-603-xxx-xxxx, kbolling@xxxxxxxx.xxx. If you have questions about your rights as a participant, please contact the Antioch University New England Institutional Review Board (IRB) Chair, Dr. Katherine Clarke, by email at kclarke@antioch.edu or by mail at 40 Avon St., Keene, NH, 03431. You may also contact Dr. Melinda Treadwell, Vice President of Academic Affairs at Antioch University New England, at mtreadwell@antioch.edu.

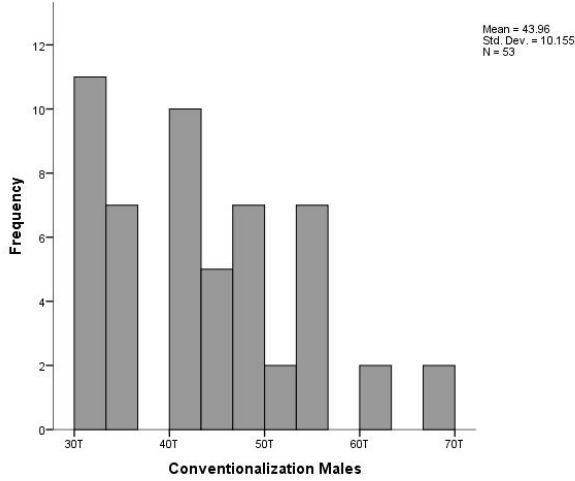
If you would like to receive the results of this research project once it is completed, please email the principal investigator with your name, mailing address or email address, and request. This information will not be linked to your survey responses in any way, and your personal information will not be saved once the results have been mailed to you.

Appendix D

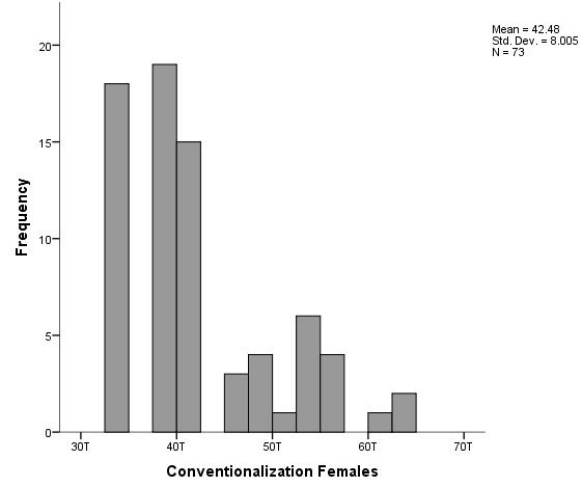
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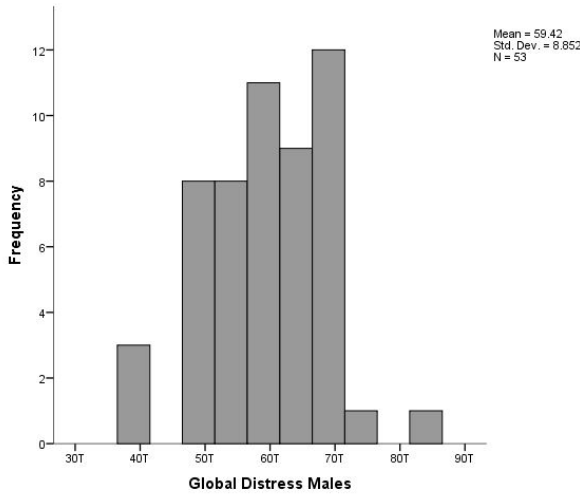
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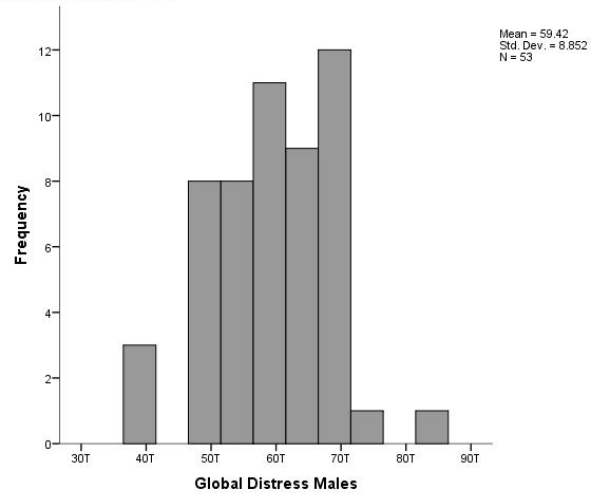
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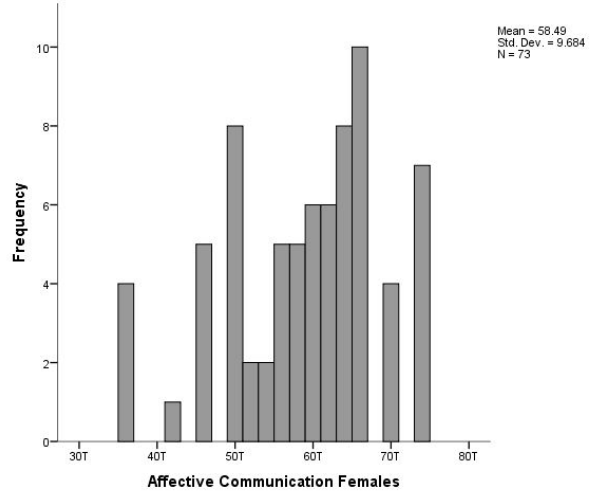
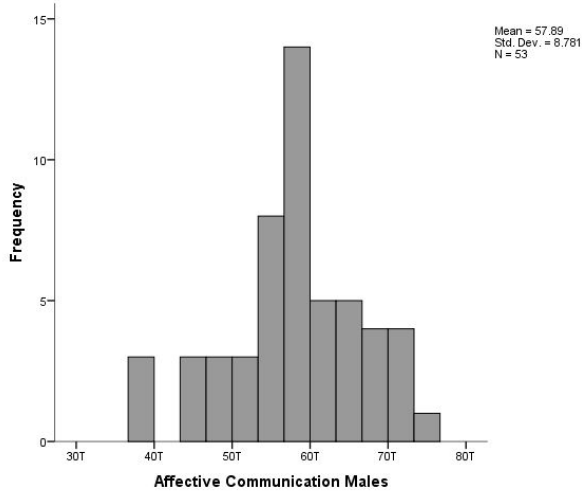
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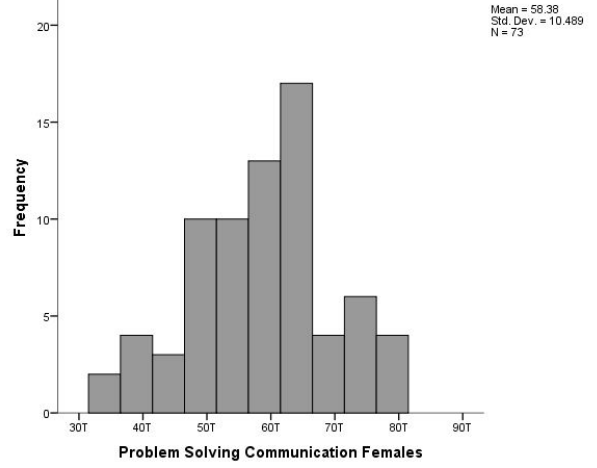
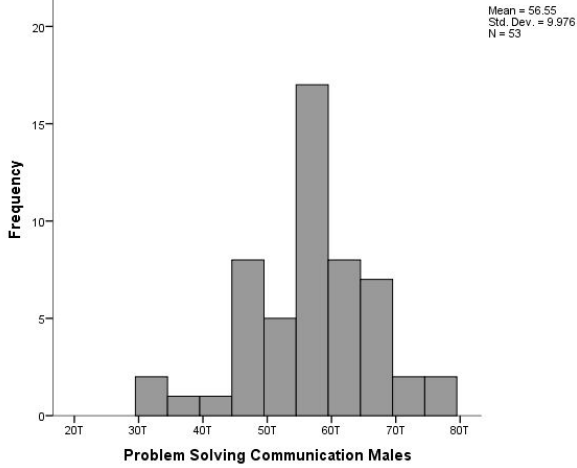
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Appendix D (Continued)



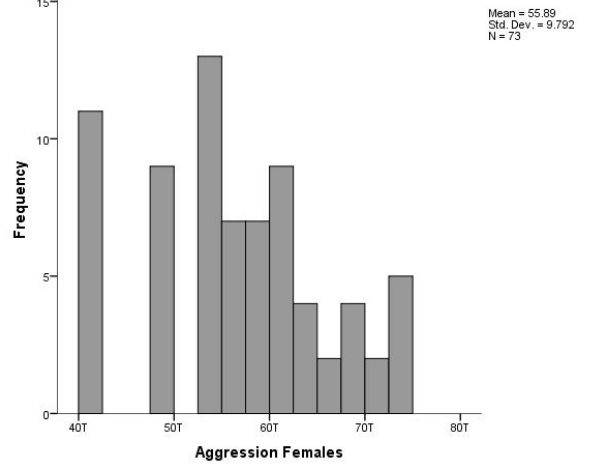
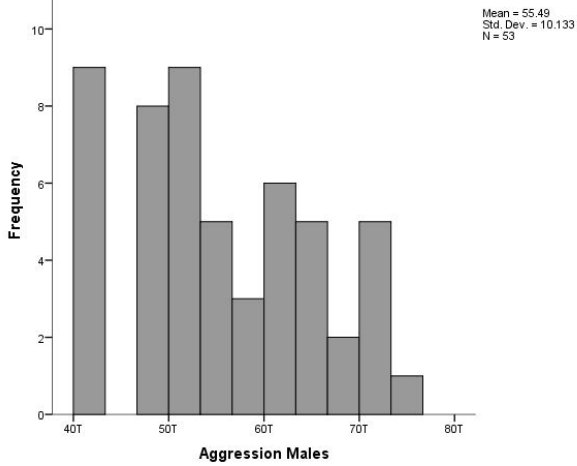
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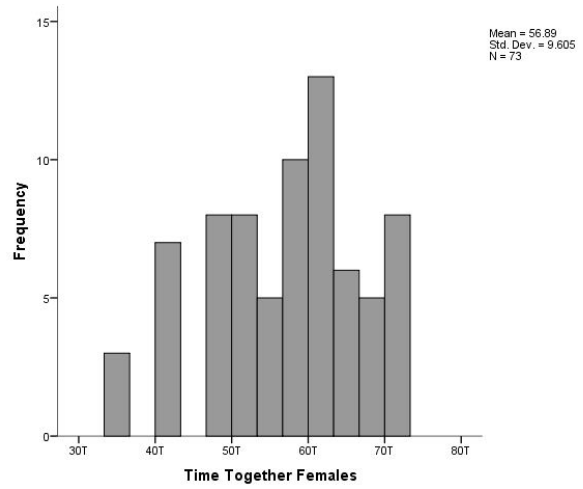
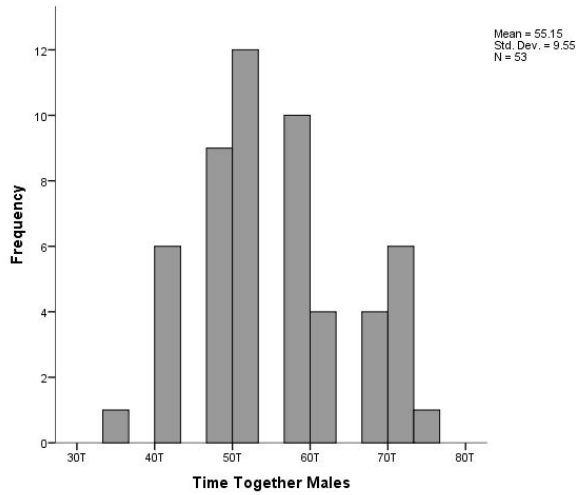
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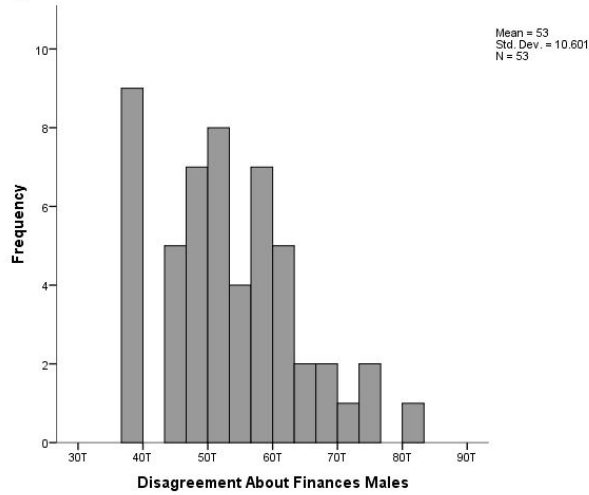
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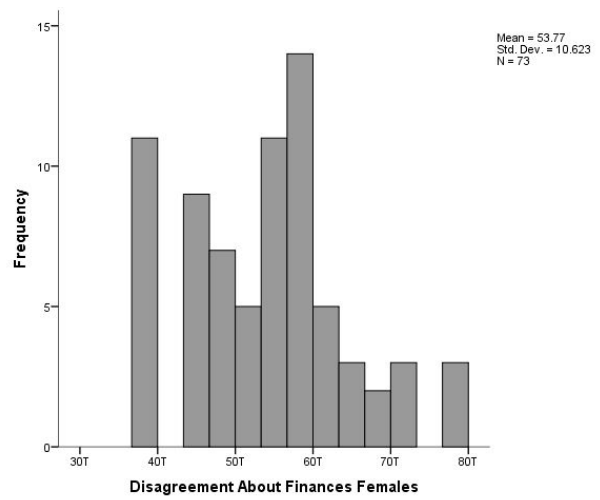
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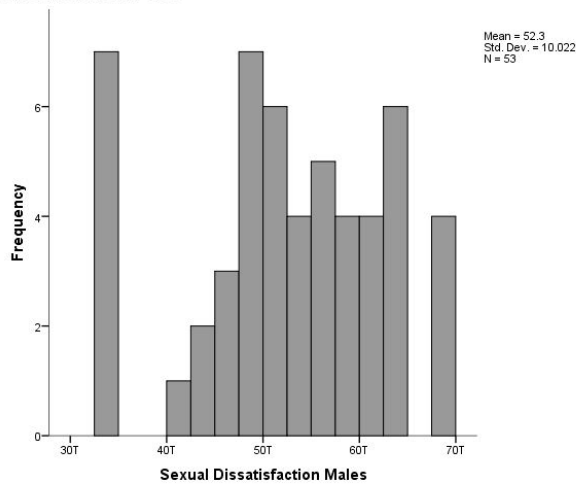
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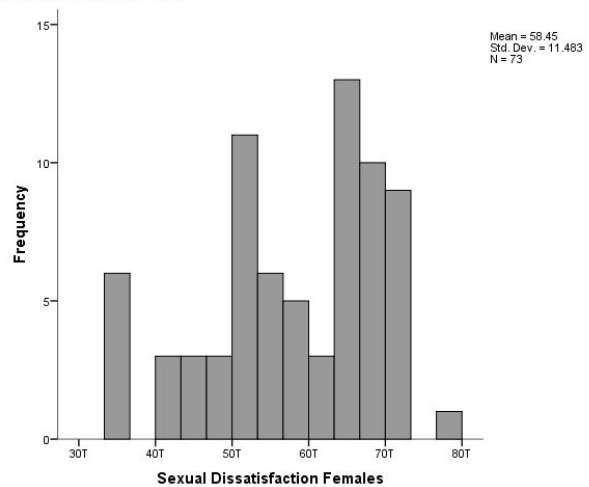
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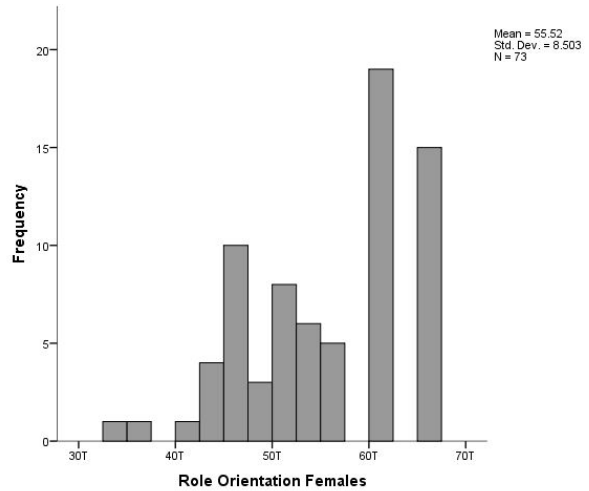
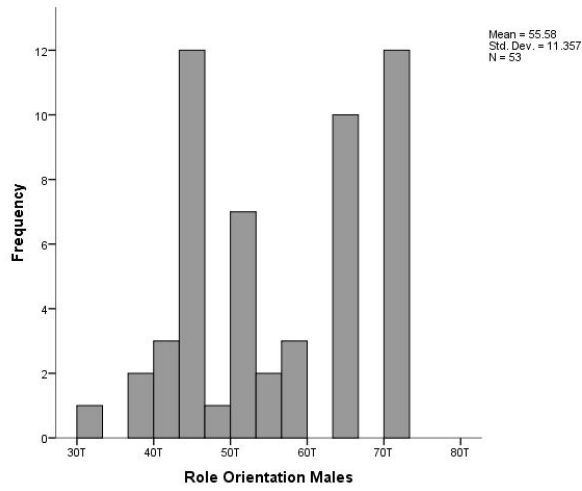
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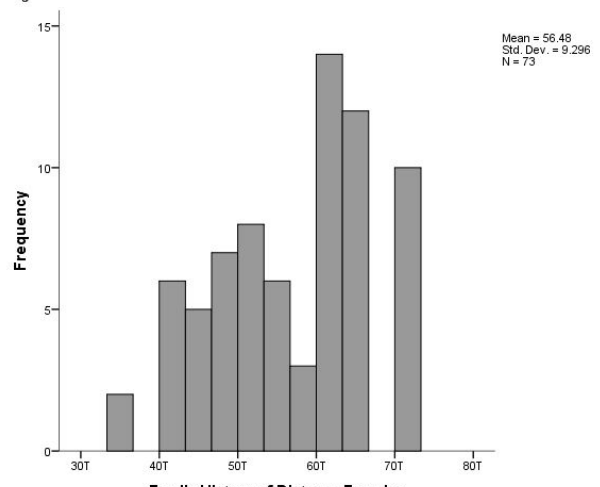
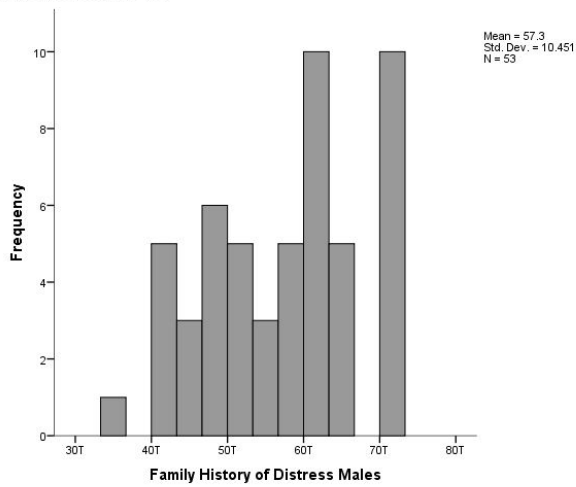
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Appendix D (Continued)



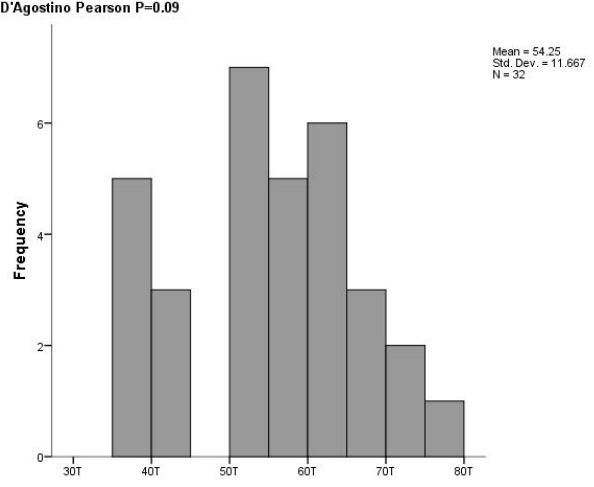
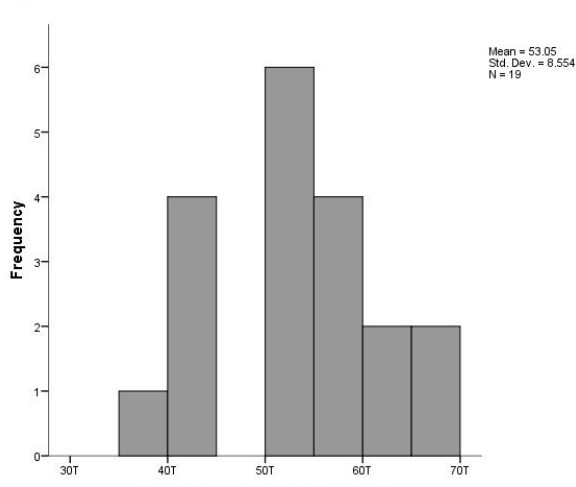
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D'Agostino Pearson P=0.10

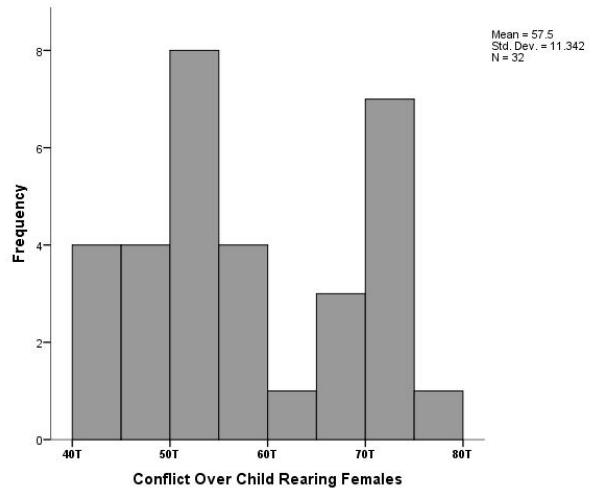
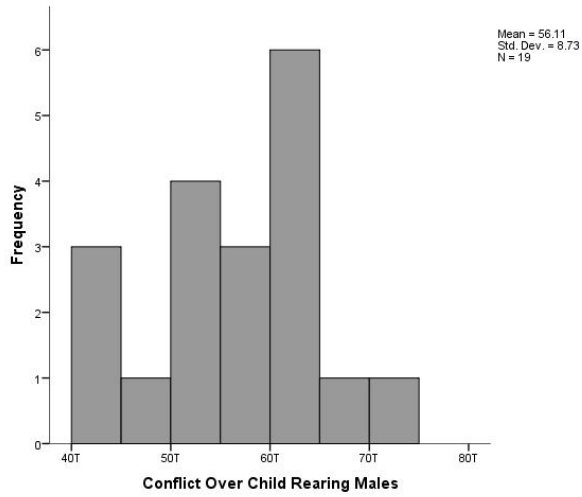
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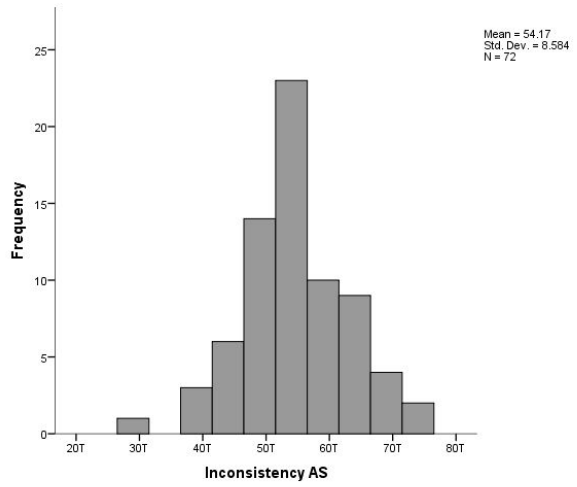
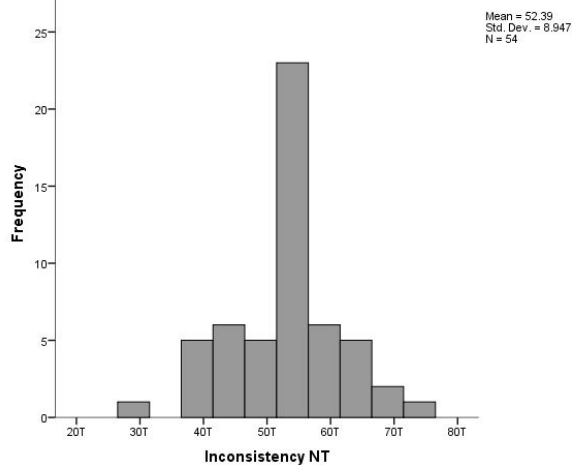
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Appendix D (Continued)



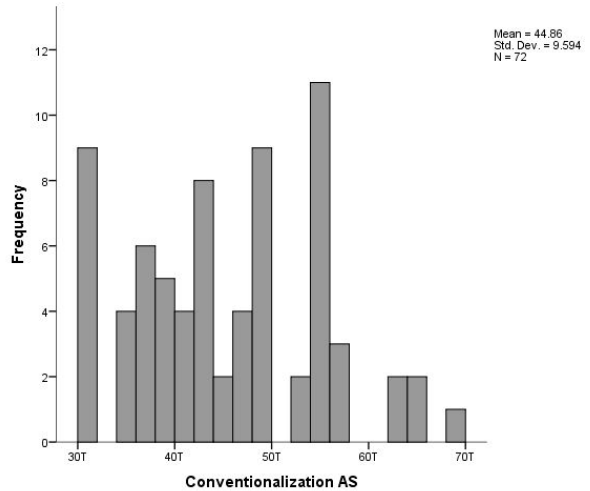
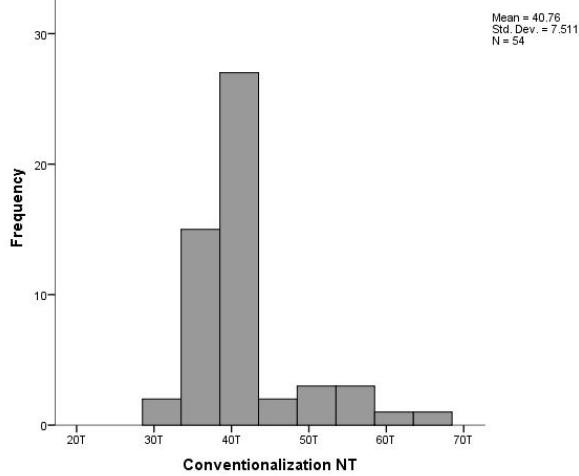
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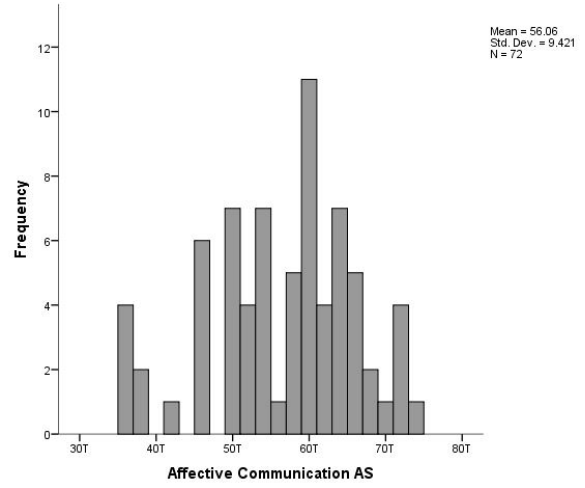
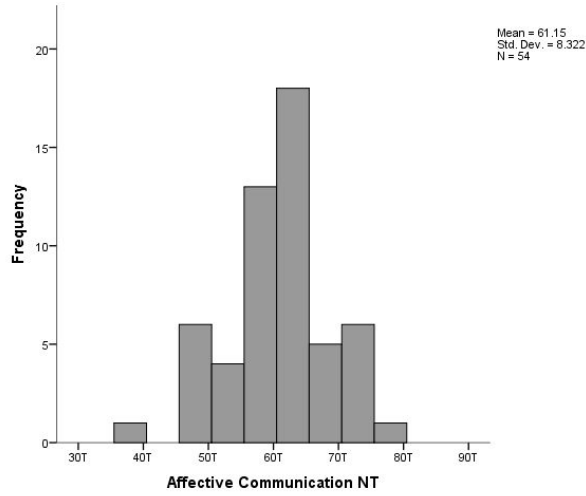
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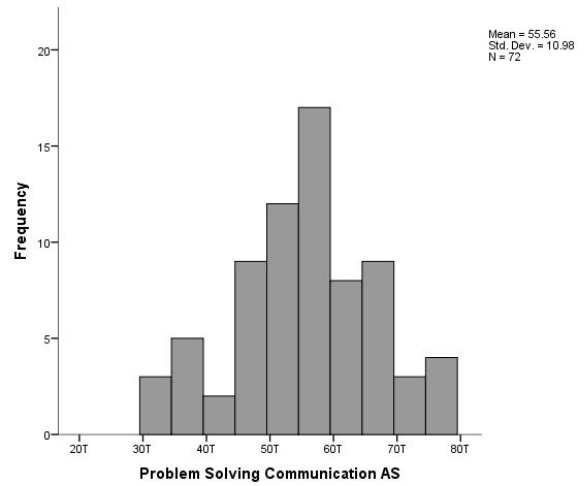
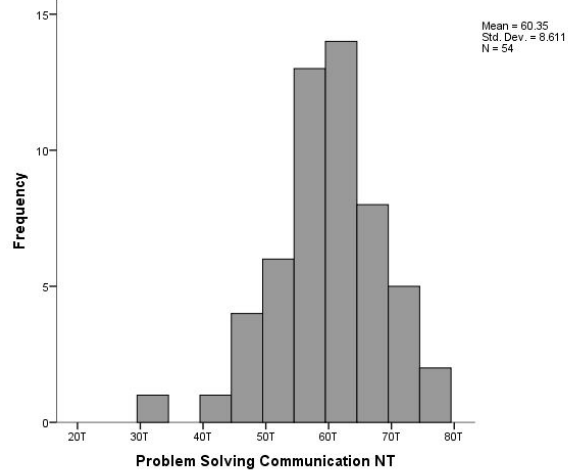
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Appendix D (Continued)



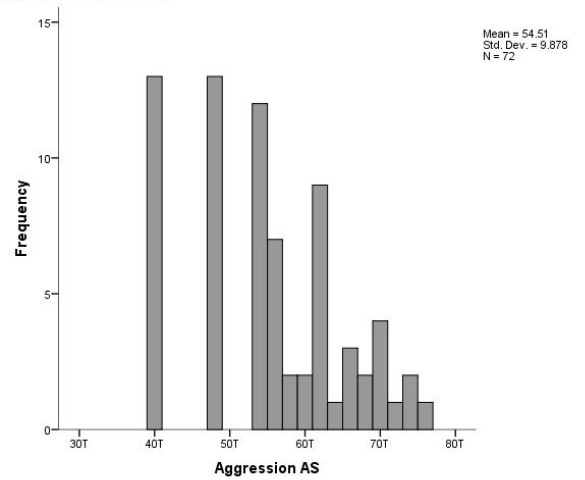
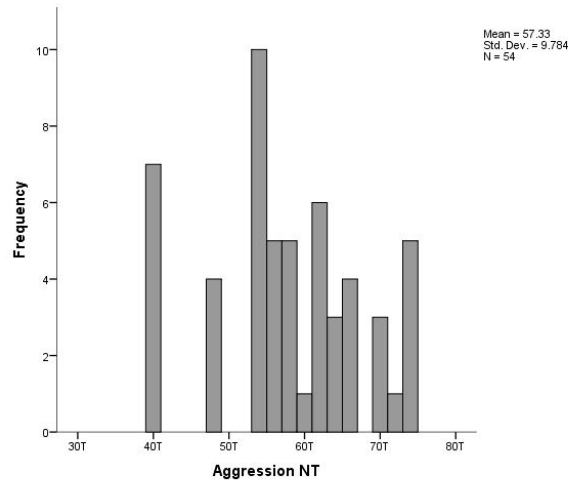
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D'Agostino Pearson P=0.34



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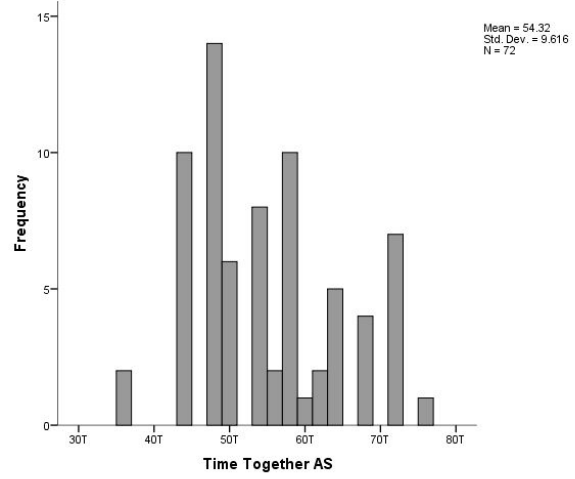
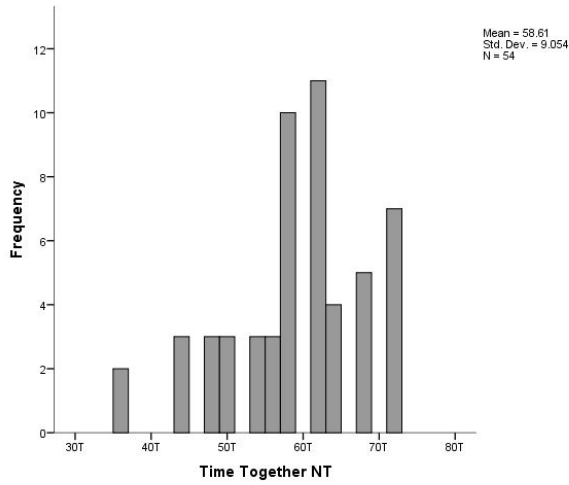
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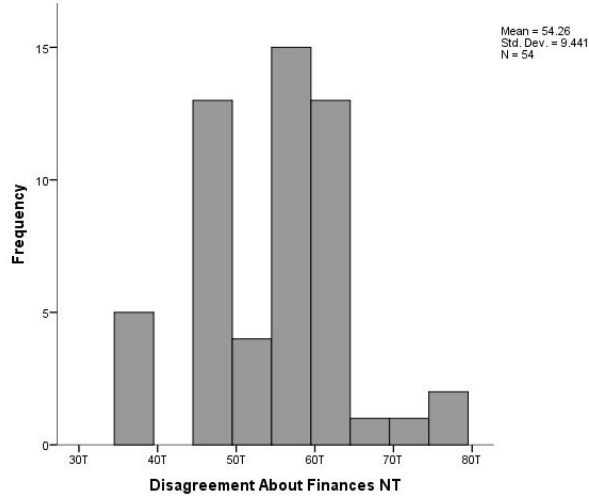
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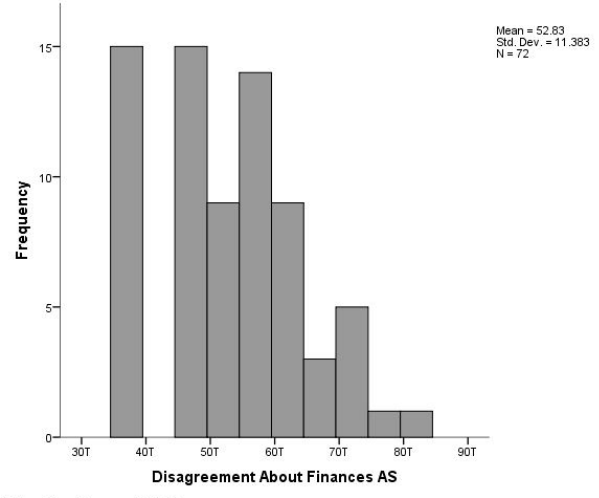
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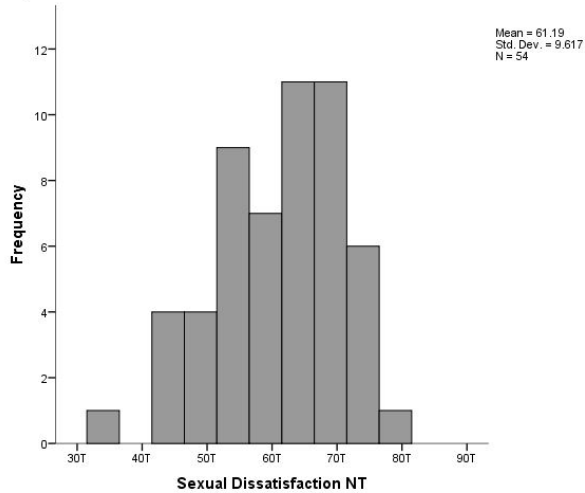
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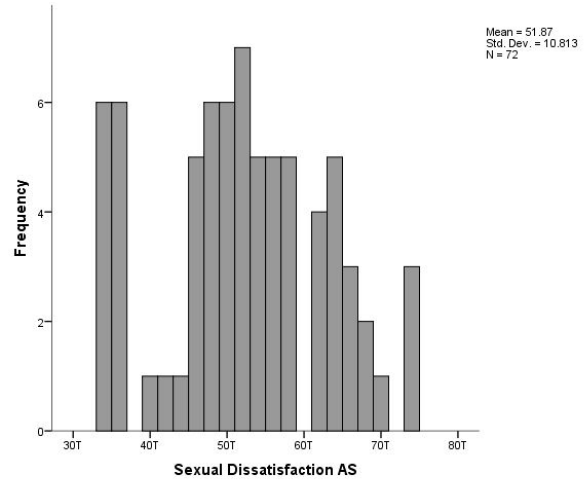
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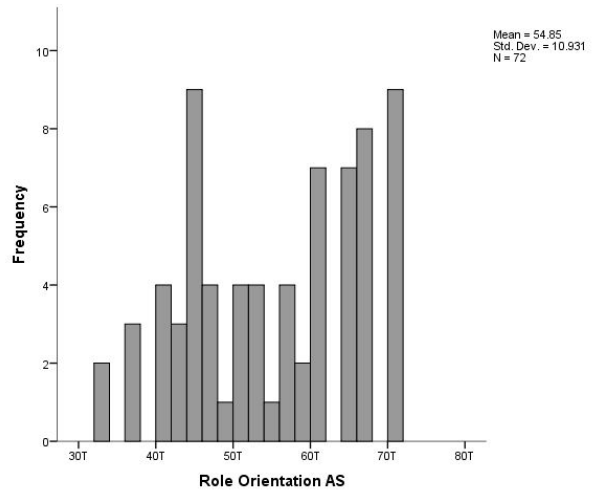
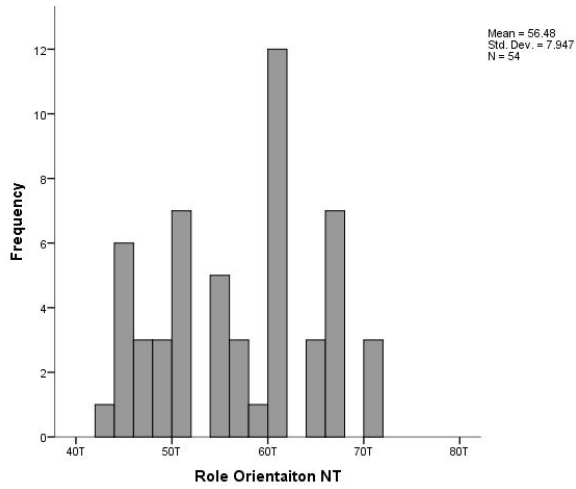
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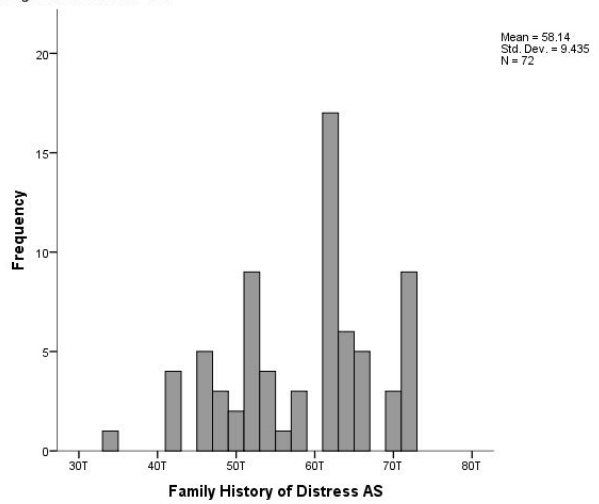
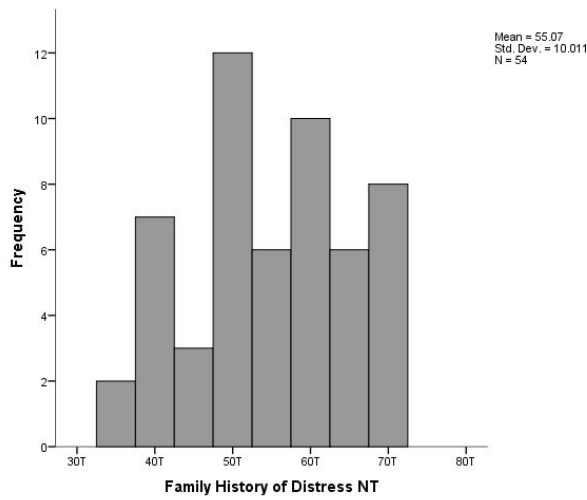
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Appendix D (Continued)



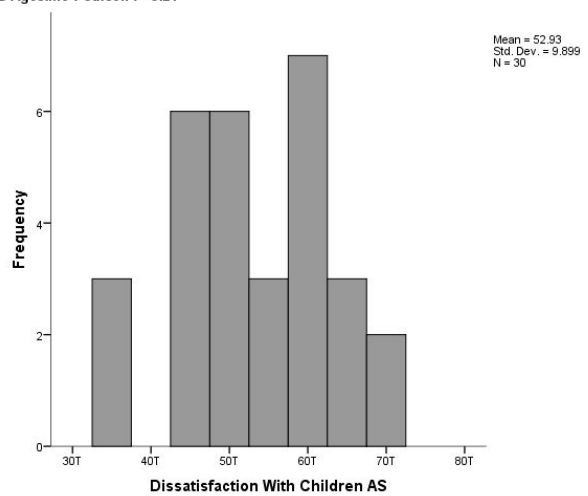
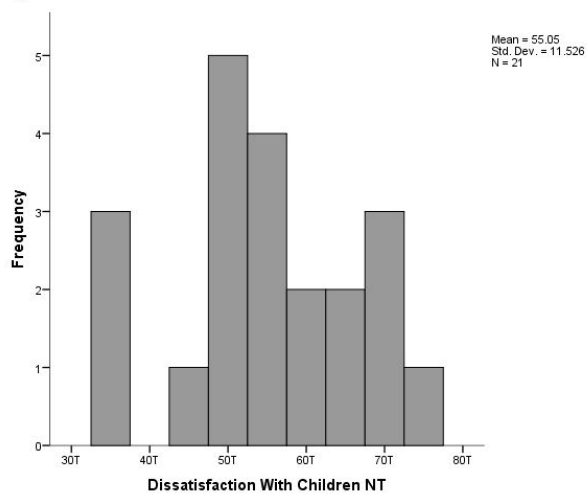
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D'Agostino Pearson P<.01



D'Agostino Pearson P=0.07

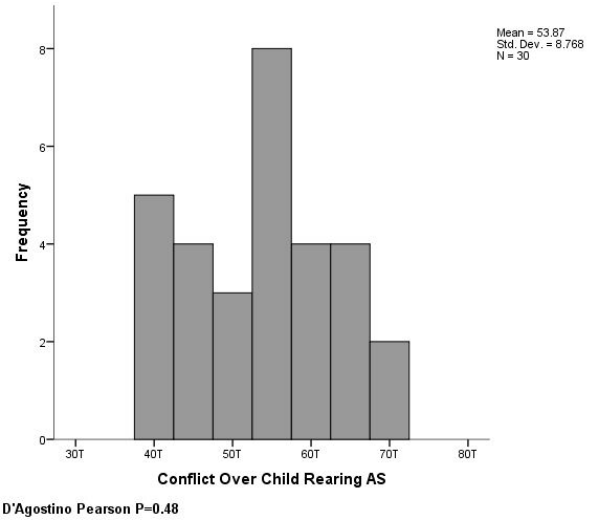
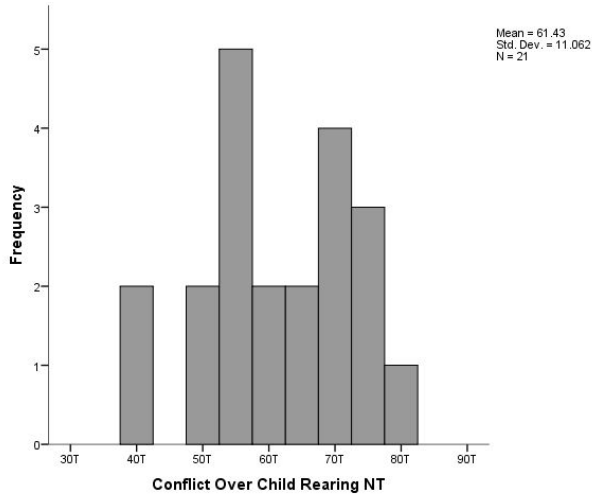
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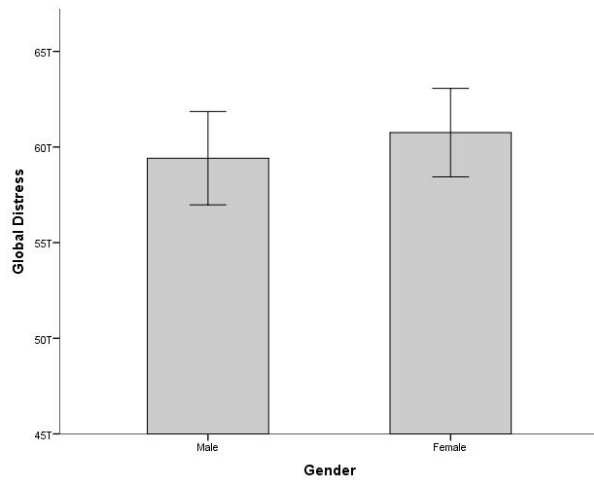
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Appendix D (Continued)

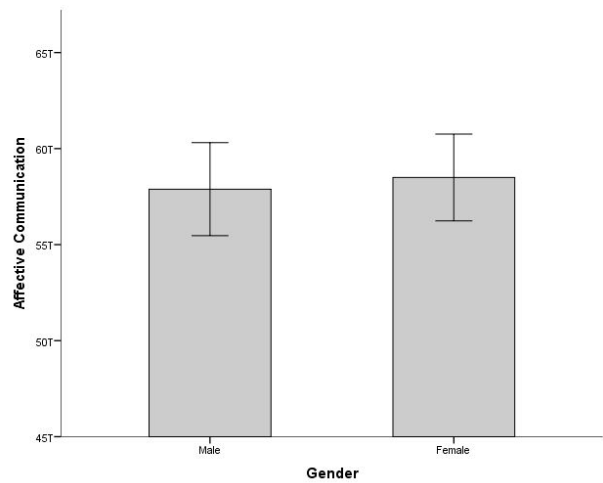


Appendix E

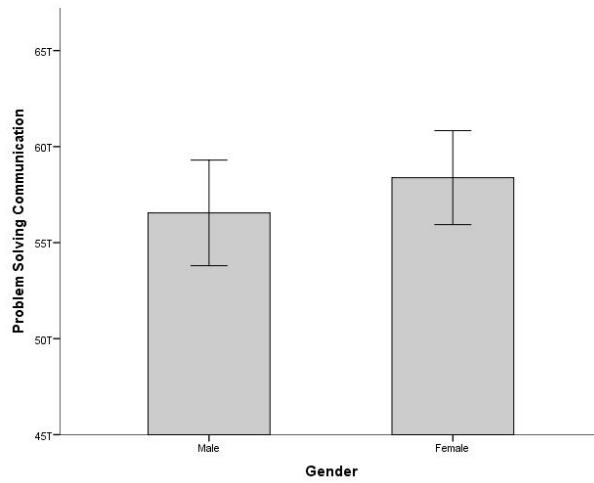
Comparison of Means by Gender



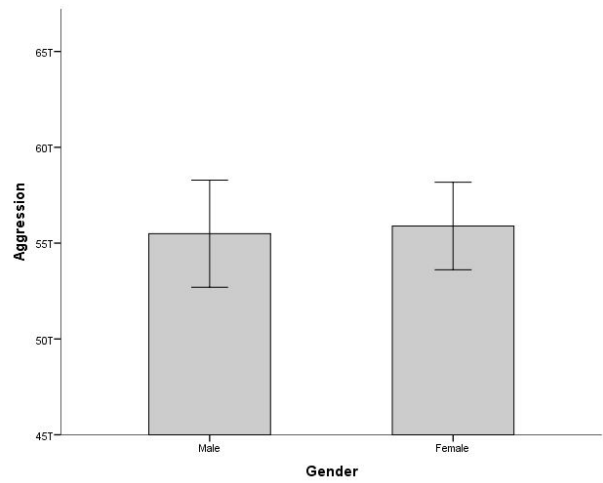
Males vs. Females on the GDS Scale



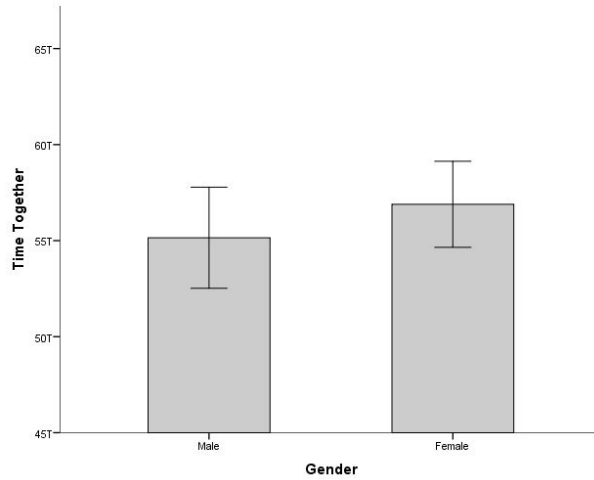
Males vs. Females on the AFC Scale



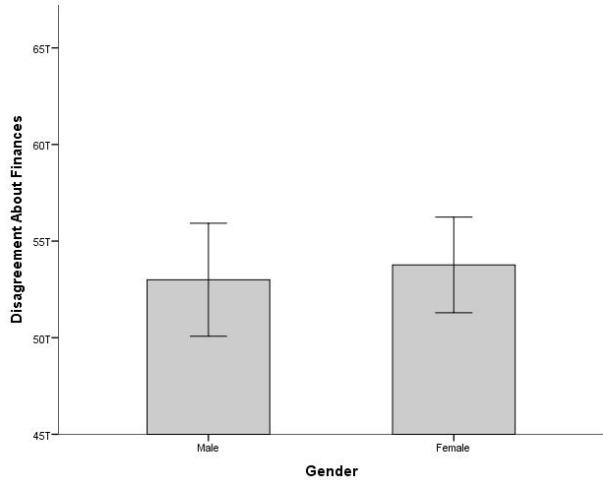
Males vs. Females on the PSC Scale



Males vs. Females on the AGG Scale

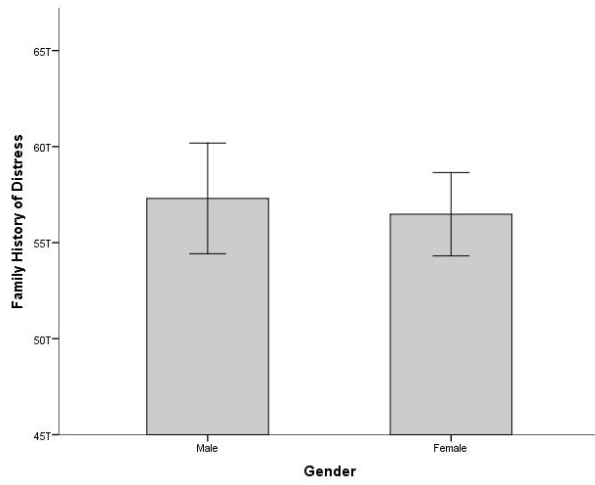


Males vs. Females on the TTO Scale

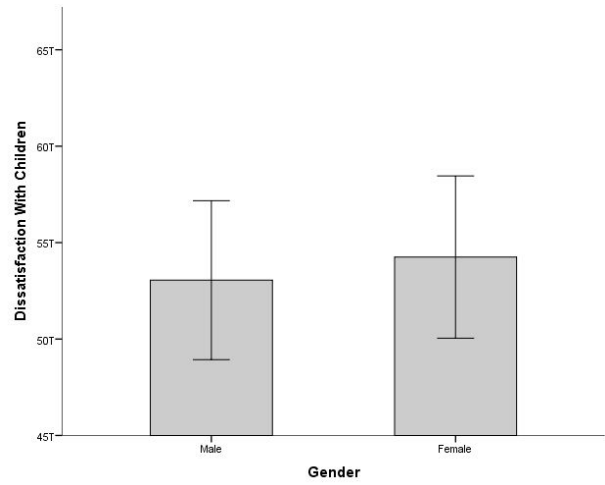


Males vs. Females on the FIN Scale

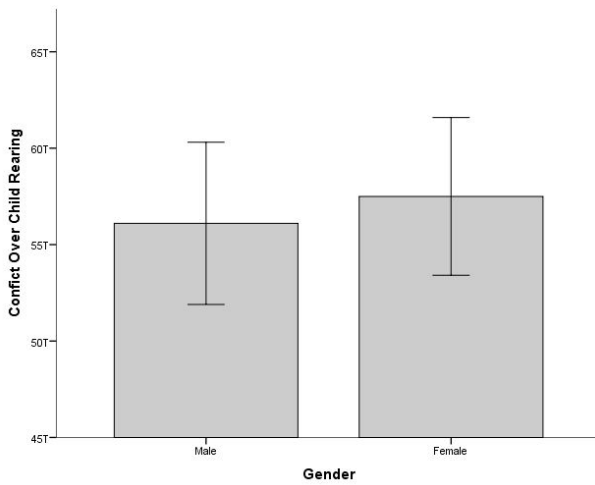
Appendix E (Continued)



Males vs. Females on the FAM Scale



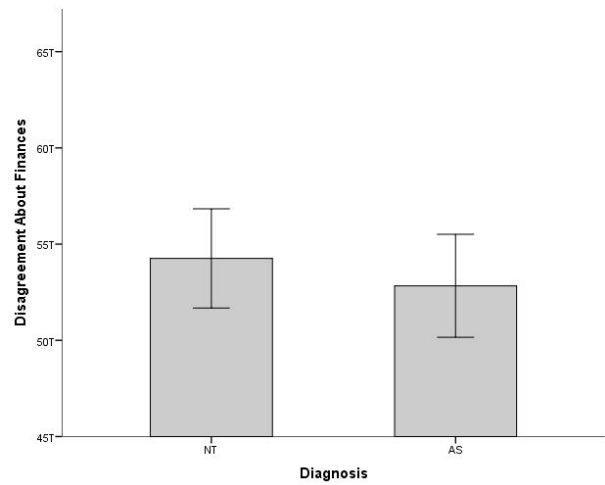
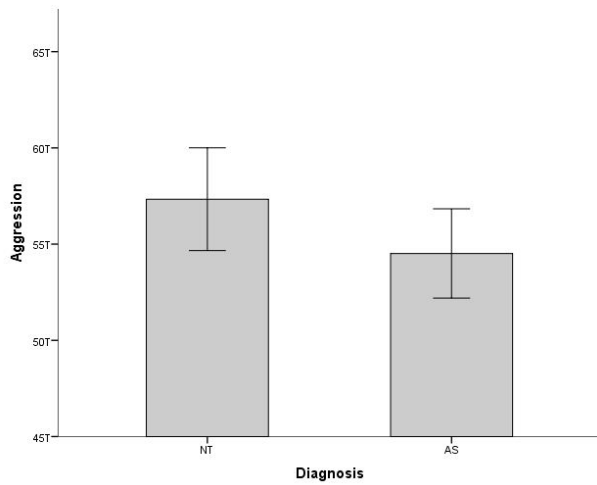
Males vs. Females on the DSC Scale



Males vs. Females on the CCR Scale

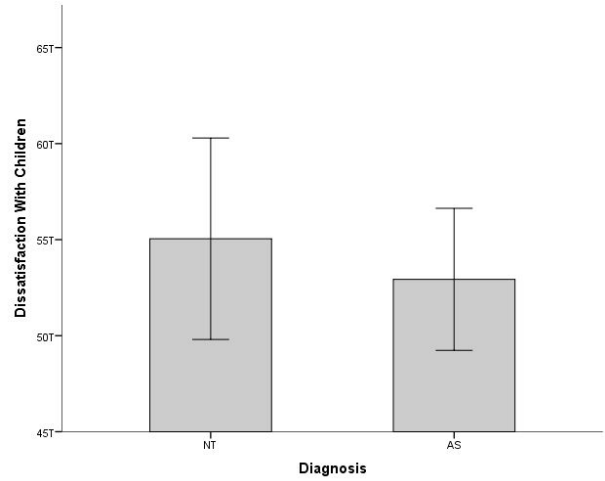
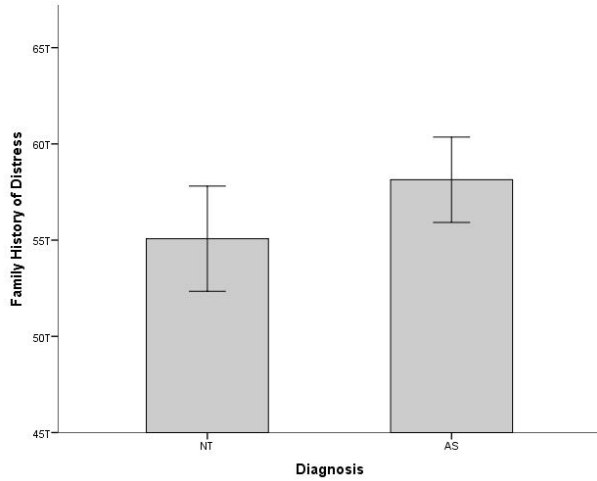
Appendix F

Comparison of Means by Diagnosis



NT vs. AS/ASD Individuals on the AGG Scale

NT vs. AS/ASD Individuals on the FIN Scale



NT vs. AS/ASD Individuals on the FAM Scale

NT vs. AS/ASD Individuals on the DSC Scale

Appendix G: Permissions

December 22, 2014

Kim Bolling
Graduate Student
Antioch University New England
40 Avon Street
Keene, NH 03431

Re: *Marital Satisfaction Inventory, Revised (MSI-R)*

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WPS Rights & Permissions
e-mail: sceja@wpspublish.com

FD:sc

April 6, 2015

Kim Bolling
Graduate Student
Antioch University New England
40 Avon Street
Keene, NH 03431

Re: Marital Satisfaction Inventory, Revised (MSI-R)

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e-mail: sceja@wpspublish.com

FD:sc

March 29, 2013

Kim Bolling
Graduate Student
Antioch University New England
40 Avon Street
Keene, NH 03431

Re: Marital Satisfaction Inventory, Revised (MSI-R)

Dear Ms. Bolling –

In follow-up to your email of 28March'13, supported by Dr. George Tremblay's letter of support on 28March'13, this serves to provide terms that will permit you to adapt the format of the MSI-R for administration and scoring via a secure, password-protected on-line environment, for sole application within your registered graduate study, examining the marital satisfaction of couples in which one and only one partner has Asperger's Syndrome.

Western Psychological Services will authorize you to adapt and arrange for delivery of MSI-R material as described – parallel with and consistent to the entire prevailing item set, and using prevailing response categories – including your administering the scale a specific number of times within the project, and your creating a scoring-only computerized key for tabulation of item responses, as based on our proprietary hand-scoring key. Our authorization is for the sole purpose of conducting the above-described study, and not for continued or commercial use, and is subject to satisfaction of the following conditions:

- (1) You must purchase from WPS a non-exclusive license for the anticipated number of MSI-R administrations.
- (2) The license fee for this described use of the MSI-R will be based on prevailing prices for the hand-scored MSI-R Autoscore Answer Form (W-328A), less 20% Research Discount. Note that we license this instrument in units of twenty (20) with one hundred (100) minimum licensed uses; shipping and handling fees are not applicable to licensing fees (e.g., 150 total adapted MSI-R administrations @ \$47.50/20 = \$356.25 x 80% = \$285.00 total license fee).
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Kim Bolling
Graduate Student
Antioch University New England
March 29, 2013
Page Two of Two

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and
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Sincerely yours,

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I agree to the terms stated herein.

4/4/2013

Date

Kim Bolling
For: Antioch University New England