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The relationship between childhood and adolescent family environment and adult psychological functioning in females who experienced childhood sexual abuse

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The Relationship between Childhood and Adolescent Family Environment and Adult
Psychological Functioning in Females Who Experienced Childhood Sexual Abuse

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
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ABSTRACT

Research has shown childhood sexual abuse (CSA) to be related to many negative outcomes in adulthood including psychopathology. Findings in this area, however, are very inconsistent, with the relationship between CSA and adult outcomes varying greatly across studies. This relationship is further complicated by the co-occurrence with CSA of other risk factors in childhood. The present study examines the prediction of adult psychopathology, measured by the Brief Symptom Inventory (BSI; Derogatis, 1982), made by CSA, measured by the Early Sexual Experiences Survey (ESE; Bartoi & Kinder, 1998), childhood SES (Hollingshead, 1975), parental bonding, as measured by the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979), and parental separation/divorce. It was hypothesized that CSA, SES, PBI, and parental separation/divorce would significantly predict BSI scores. It was also hypothesized that CSA would significantly predict BSI scores beyond the variance accounted for by the other variables. Results indicated that all predictor variables were significantly related to BSI score in the hypothesized direction, except for childhood SES which was found to be unrelated to BSI score in adulthood. A regression model including parental care, overprotection, and divorce/separation significantly predicted BSI score. When objective and subjective CSA severity scores were added to the equation, the amount of variance in

BSI score accounted for significantly increased. Amounts of shared variance were quite high, but results indicated that CSA severity accounts for variance in adult psychological functioning beyond that accounted for by parental care, overprotection, and divorce.

Introduction

The study of childhood sexual abuse (CSA) has produced a significant body of research regarding prevalence, risk factors, outcomes, and treatments related to CSA. Throughout the literature, the prevalence of CSA in community samples usually falls between 12% and 35% for women and between 4% and 9% for men (Putnam, 2003). The higher rates are usually found in studies that use a more liberal definition of what constitutes CSA. Significant risk factors for CSA include female gender, older age at the time of abuse, mental and/or physical disability, and parental dysfunction. Outcomes of CSA are usually studied by assessing symptoms of psychological disorders. There are a wide range of symptoms that have been associated with CSA throughout childhood and adulthood, but the most common across the literature are depression in adulthood and sexualized behaviors in childhood.

Empirical study of the long-term outcomes of CSA has shown somewhat inconsistent relationships between experiencing CSA and developing symptoms of psychopathology in adulthood (Neumann, Houskamp, Pollock, Briere, 1996; Kendall-Tackett, Williams, & Finkelhor, 1993; Putnam, 2003). This area of research is complicated by high levels of co-occurrence between CSA and other childhood risk factors such as physical abuse, emotional abuse, neglect, inter-familial conflict, substance abuse, low socio-economic status, parental psychopathology, family discord, parental separation, and foster care (Maker, Kemmelmeier, & Peterson, 1999; Melchert, 2000; Spaccarelli, 1994). These co-occurring risk factors complicate the research process by making both general conceptualizations and actual statistical analyses more difficult

(Romans, Martin, and Mullen, 1997). Co-occurring risk factors are difficult to study because a causal chain of events is often impossible to distinguish. Regression analyses are commonly used to quantify risk factors' ability to predict negative outcomes. When studying CSA and early family environment, high levels of covariation can suppress effect sizes and statistical significance in regression analyses or go so far as to invalidate the analysis. While many of these problems cannot be entirely solved, modern experimental design and statistical analyses do provide the means to examine CSA and other risk factors simultaneously, allowing for the comparison of predictive ability of many risk factors for adult psychopathology.

The difficulties in studying CSA have resulted in much of the existing empirical research to be conflicting. Many studies have found relationships of varying strength between childhood sexual abuse and psychopathology symptoms and diagnoses (Kendall-Tackett, Williams, & Finkelhor, 1993). Both short-term and long-term outcomes of CSA have been studied, and CSA has been shown to have an effect on the victim's psychological health in both childhood and adulthood. Research has shown the effects of CSA during childhood to be numerous and varied, unable to be explained with any single symptom or diagnosis (ex. Merry & Andrews, 1994; Koverola, Pound, Hegar, & Lytle, 1993; Oates, O'Toole, Lynch, Stern, & Cooney, 1994). Merry & Andrews (1994) studied a group of children who were CSA victims, aged 4-16, 12 months following initial disclosure of abuse. They found that these children showed exceptionally high rates of Oppositional Defiant Disorder (ODD), Post-Traumatic Stress Disorder (PTSD), anxiety disorders, depressive disorders, and Attention-Deficit Hyperactivity Disorder (ADHD), with 63.5% of the children warranting an axis-I

diagnosis using the DSM-III-R. In a similar study Koverola, Pound, Hegar, and Lytle (1993) found that CSA was related to depression in children. Using the Child Depression Inventory with a sample of 6-12 year-olds, they found a significant relationship between CSA and symptoms of depression in childhood. These results illustrate the diversity of the potential effects of CSA. Some empirical research has also examined how childhood symptoms related to CSA change over time. Oates, O'Toole, Lynch, Stern, and Cooney (1994) studied the stability of outcomes related to CSA in response to treatment. They found that therapy was not related to outcome. However, they did find that quality of family functioning was related to improvement in self-esteem, depression, and behavior. These results support the need for further study regarding the influence of family environment on outcomes related to CSA.

A significant amount of research has also gone into studying the long-term effects of CSA on functioning during adulthood. In a review of 45 studies, Kendall-Tackett, Williams, & Finkelhor (1993) found that many studies showed that childhood sexual abuse was related to anxiety, depression, posttraumatic stress disorder, and other clinical diagnoses. In their review, they found across the 45 studies an average of 28% of survivors of childhood sexual abuse showed anxiety symptomology, 33% showed fear symptomology, 53% showed posttraumatic stress syndrome symptomology, 28% showed depressive symptomology, 18% showed learning difficulties, and 37% showed general behavioral problems. 30% of survivors of childhood sexual abuse showed symptoms of internalizing disorders while 23% showed symptoms of externalizing disorders, however, these averages were not descriptive of all 45 studies because the range of symptomology was very large. For example, averaged across eight studies, 28% of CSA survivors

exhibited anxiety symptomology, however, one study included in this average found only 14% while another found 68% of survivors of CSA exhibit anxiety symptomology. General PTSD symptoms were reported by an average of 53% of victims of CSA, but the results ranged from 20% to 77%. Suicidal ideation was reported in an average of 12% of CSA survivors with a range of 0% to 45%. Somatic complaints in 14% of survivors ranged from 0% to 60%. Inappropriate sexual behavior was shown in an average of 28% of survivors with a range across studies from 7% to 90%. Self-injurious behavior was shown in an average of 15% of survivors with a range between 1% and 71%. Most of these means and ranges were based on the results from approximately five studies, indicating that the ranges are not large because of one or two extreme outliers compared to a homogeneous group, but because across studies there is heterogeneity, a vast difference in results. Some studies linking CSA to the development of symptoms of adult psychopathology show a strong relationship, while others show no relationship (Young, Harford, Kinder, & Savell, 2007). The range in results between studies is extremely problematic to the study of CSA's influence on the development of psychopathology. Many studies found very small or no effects of CSA while others found huge effect sizes and a high prevalence of psychopathology symptomology.

These wide ranges in results are likely to be partly due to differences in study samples. Great care is necessary when comparing the likelihood of symptomology in college students, psychiatric inpatients, clinical outpatients, and community samples due to the differences in the likelihood of psychopathology. Another contributing factor to this wide range is the definition of CSA. Without a standard definition of CSA, meta-analysis in this area of study becomes questionable. The meta-analysis by Kendall-

Tackett, Williams, & Finkelhor (1993), however, did show that on average, CSA is related to many symptoms of psychopathology. This broad range of symptomology, however, indicates that there is no single diagnosis or type of symptom that can explain the effects of childhood sexual abuse. This evidence indicates that attempting to define the outcomes of CSA as a specific psychiatric diagnosis is not empirically supported.

Given the difficulty in studying CSA's prediction of adult psychopathology due to high levels of covariation with other risk factors and the mixed results of past studies of CSA and adult psychopathology (ex. Kendall-Tackett, Williams, & Finkelhor, 1993; Romans, Martin, and Mullen, 1997; Neumann, Houskamp, Pollock, Briere, 1996; Young, Harford, Kinder & Savell, 2007), it is clear that further study is necessary. Ideally, other co-occurring risk factors would be included in the analysis. Socioeconomic status (SES) is a vital aspect of early family environment and one such co-occurring risk factor. Children and adolescents who come from high SES homes enjoy many advantages and opportunities that low SES homes often do not provide. Because there are many negative outcomes related to low SES, it is one of the most commonly controlled variables in psychological data analysis. In a very informative and broad review of the correlates of SES in childhood, Evans (2004) found many relationships relevant to the study of early family environment predicting adult psychopathology. While his article did not make a direct link between low childhood SES and adult psychopathology, it does show many specific relationships between SES and other risk factors for negative outcomes such as adult psychopathology. If low SES and other risk factors co-occur with CSA, the simultaneous analysis of these risk factors may be very informative and perhaps provide insight into a key limitation to the current body of research on the effects of CSA. Evans

showed that as SES increased, the likelihood of the parents being divorced or separated decreased. A child with divorced parents is at increased risk due to the lack of both parents in the home, which is related to decreased parental social support, increased inter-parental conflict, and decreased household income due to a parent (and their income) being absent. Evans also found that children in lower SES households were disciplined more harshly and that in early family environment, as SES increases, so do mother social support, mother warmth, and cognitive stimulation.

Examining a more specific form of cognitive stimulation, Evans (2004) found that children of professional-level parents addressed significantly more words to their children than did working-class parents, who in turn addressed significantly more words to their children than welfare receiving parents. In line with public opinion, Evans found that SES also influenced the quality of the schools children attended and the houses they lived in. Overall, Evan's study shows us that children of lower SES are more likely to live in households with more conflict, less support, less cognitive stimulation, less communication, and lower quality of housing. Also, they are less likely to have adequate facilities for school. Combining all these factors suggests how many inter-related disadvantages low SES children and adolescents can face. The co-occurrence of SES risk factors combined with the other early childhood environment risk factors for adult psychopathology suggest that when studying risk factors empirically, it is advantageous to examine many aspects of early family environment simultaneously. SES provides a quantifiable variable that may provide information on many co-occurring risk factors that are far more difficult to measure and quantify.

Despite substantial evidence of the disadvantages related to growing up a child with low SES, the current body of literature on CSA and its effects is very limited in its examination of the role that SES may play in the relationship between CSA and negative outcomes in adulthood. Although low socioeconomic status (SES) is a significant risk factor for physical abuse and neglect, research has shown that it is a much less powerful predictor of CSA (Putnam, 2003), indicating that CSA is equally, or close to as likely to occur in high or low SES households. Because childhood SES does not appear to predict CSA, the influences of these risk factors on the development of adult psychopathology are possibly independent. Only by studying these variables simultaneously can research hope to show the relationship and possible interaction between them. To date, this area of research has been understudied, but has shown that childhood SES can play a role in the long-term outcomes related to CSA. In a sample of 90 university clinic outpatients aged 18-40, among survivors of CSA, high SES was a predictor of better mental health in adulthood (Katerndahl, Burge, & Kellogg, 2005). Along with high SES, lack of family alcohol abuse, fewer abuses by first perpetrator, and fewer perpetrators predicted better mental health. Porter, Lawson, & Bigler (2005) studied the cognitive abilities and psychopathology of CSA survivors, aged 8 – 14 at the time of the study, and found that abuse survivors had higher levels of psychopathology, lower performance on attention/concentration tasks, and lower performance on memory tasks. When controlling for SES and IQ, however, the difference in performance on the memory task became non-significant, an example of how negative outcomes associated with CSA can sometimes be explained by confounding variables. This research shows evidence that SES plays a role in the relationship between CSA and negative adult outcomes. High childhood SES

appears to protect CSA survivors from negative outcomes while low childhood SES appears to exacerbate the risk. In addition to childhood SES playing a predictive role along with CSA, it appears that CSA may predict adult SES. Romans, Martin, and Mullen (1997) found that women who were victims of CSA were more likely to have a lower SES than their family of origin. This effect was larger as severity of CSA increased, however, CSA predicting lower SES does not necessarily mean that childhood/adolescent SES and CSA will be related. It is clear that both are risk factors for adult psychopathology and therefore, are worth studying together. If CSA and SES both put a person at risk for the development of adult psychopathology, then perhaps the two together will exacerbate the risk, causing the results of the present study to show an interaction effect.

Parental characteristics such as bonding, care, level of protection, parenting style, and inter-familial conflict can also influence the development of adult psychopathology (Chambers, Power, & Durham, 2004; Fosse & Holen, 2006; Heider, Matschinger, Bernert, Alonso, & Angermeyer, 2005; Hill et. al., 2000). Like the other risk factors already mentioned, parental characteristics likely share high levels of covariation with other significant risk factors, such as SES. As already discussed, low SES households are more likely to have divorced or separated parents (Evans, 2004). Divorced or separated parents are more likely to have high levels of inter-parental conflict. Also, a child of divorced or separated parents may have less parental support due to the absence of a parent. Empirical research has shown a relationship between divorce and adult psychopathology. Ge, Natsuaki, and Conger (2006) studied the influence of divorce on adolescence and early adulthood depression. They found that among both males and

females, those in divorced families showed higher levels of depression in late adolescence. This difference remained significant into early adulthood for males, but disappeared for females. Also, depression scores were significantly higher for females than males across adolescence and early adulthood.

Even when parents are together, there are several characteristics of parenting that can lead to an increased likelihood of developing adult psychopathology. Enns, Cox, and Clara (2002) used the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) to study the relationship between parental bonding and adult psychopathology. They found that lack of parental care by both mothers and fathers significantly predicted lifetime onset of many forms of psychopathology, including mood, anxiety, substance use, and personality disorders. Parenting characteristics as measured by the PBI predicted approximately 1-5% of the variance in adult psychopathology. Because of the apparent link between many aspects of parenting and the development of adult psychopathology, it is important to include parenting variables in any analyses of childhood and adolescent experiences predicting adult psychopathology outcomes.

Many studies have examined the relationship between parental care and overprotection and their relationship to psychological distress in adulthood. In a comparison of bulimic and non-bulimic participants among psychiatric outpatients, Fosse & Holen (2006) found that those diagnosed with bulimia nervosa were more likely to report CSA, emotional abuse, physical abuse, and bullying by peers during childhood. Those diagnosed with bulimia nervosa also scored significantly higher on father overprotection scale of the PBI, and significantly lower on the father care scale. In a similar study, Romans, Gendall, Martin, and Mullen (2000) found that both CSA and

parenting characteristics measured by the PBI predicted eating disorders in adulthood. Low maternal care specifically predicted anorexia nervosa. Also, among the female survivors of CSA in the sample, paternal overprotection and early maturation emerged as significant risk factors for eating disorders in adulthood. When taken in combination, these results support CSA's relationship to negative adult outcomes. The results also support the interaction hypothesis of the current study; that participants experiencing CSA, low parental care, and high parental overprotection during childhood will be at especially high risk for negative psychological symptoms in adulthood.

When studying parenting care and protection with instruments such as the PBI, great care must be taken due to the complexity of the relationship between parenting variable, CSA, and adult outcomes. It appears that not only do both parental care and CSA predict adult outcomes, but also that parental care can predict CSA. Hill et. al. (2000) found that low maternal and paternal care increased the likelihood of abuse by a non-family member perpetrator before the age of 11, while both maternal care and experiencing CSA predicted adult affective disorder symptoms.

The study of CSA has yielded mixed results across studies. While some find "sexual abuse status alone accounted for a very large percentage of the variance," (ex. 43% for aggression and sexualized behaviors; Kendall-Tackett, Williams, & Finkelhor, 1993), concluding that CSA almost necessarily predicts negative outcomes, others find that CSA is at best a risk factor among many others and is "neither necessary, sufficient, nor acting alone" (Romans, Martin, & Mullen, 1997). A highly likely explanation for the apparent disparity in findings is that CSA is highly inter-related with many other risk factors for negative outcomes. Empirical research should attempt to disentangle this

relationship, simultaneously examining as many risk factors as possible. This will allow for a quantification of more individual aspects as well as an overall contribution of early family environment in predicting negative outcomes such as adult psychopathology. Some studies have examined the prediction of negative outcomes in adulthood by both CSA and early family environment. These studies have produced mixed results. Merrill, Thomsen, Sinclair, Gold, & Milner (2001) found that both CSA and childhood parental support independently and significantly predicted adult adjustment, although this relationship was mediated by coping style. In a similar study, Fassler, Amodeo, Griffin, Clay, & Ellis (2005) found that both severity and dichotomous measurements of CSA (abused or not abused) significantly predicted adult outcomes, as did family environment variables. The family environment variables included conflict, expressiveness, and cohesion and added significantly to the predictive power of the regression model beyond the variance accounted for by the CSA variables. Both studies emphasized the necessity of studying CSA and family environment simultaneously in order to maximize clinical utility and our understanding of the factors contributing to adult functioning. Although these studies have found that both CSA and family environment variables can uniquely contribute to the prediction of adult functioning, not all research supports this conclusion. A study by Higgins & McCabe (1994) found that CSA did not significantly contribute to the prediction of adult adjustment beyond the prediction by family environment. Even though results from previous research are in disagreement about CSA and family environment's unique prediction of adult outcomes, all their findings support the necessity of simultaneously studying CSA with other early experience variables such as early family environment.

Hypotheses

1. It was hypothesized that childhood SES, parental bonding, and parental separation/divorce would significantly predict adult psychological functioning individually and as a group.

2. It was hypothesized that the CSA variables would predict adult psychological functioning individually and together.

3. It was hypothesized that the CSA variables would account for a significant amount of variance in adult psychological functioning when added to the prediction model of the parenting variables.

4. It was also hypothesized that a significant interaction would be discovered so that children who were sexually abused and in lower SES families would be at highest risk for disorders in adult psychological functioning, while non-sexually abused children with high childhood SES would be at the lowest risk for disordered adult psychological functioning.

Method

Participants

A total of 290 undergraduate females at the University of South Florida took part in the study. The average age of the sample was 20.4 years ($SD = 2.4$) with a minimum age of 18 and a maximum age of 35 years. The sample was 53.3% Caucasian, 19.2% African American, 15.0% Hispanic, 4.2% Asian American, 4.9% multiracial, and 3.5% other. With regards to romantic relationship involvement, 49.1% reported being single, 43.9% were in a romantic relationship, 4.5% were engaged, and 1.0% were married. 34.9% of participants reported that their parents were divorced. The average participant's age at the time of this divorce was 3.1 ($SD = 4.7$) with a range from before birth to age 19.

For taking part in the study, all participants received extra credit to apply to their coursework. There were no limitations on who participated in the study other than they were female and between the ages of 18 and 35.

Measures

Demographics were determined by using a demographics questionnaire (appendix B) that asked participants their age, race/ethnicity, romantic relationship status, and whether or not there was any parental divorce/separation before the age of 18. For the purposes of assessing childhood socioeconomic status, the demographic questionnaire also asked the participant's primary childhood and adolescence caretakers' (parents or guardians) occupation and level of education.

Current psychopathology symptoms were assessed with the Brief Symptom Inventory (BSI; Derogatis, 1982), a 53-item self-report measure designed to assess common symptoms of psychopathology. Respondents were asked to rate the extent to which each item/problem has distressed them over the past seven days. Answers are on a 5-point Likert scale ranging from “not at all” to “extremely”. The BSI consists of nine subscales, which include depression, interpersonal sensitivity, anxiety, phobic anxiety, paranoid ideation, somatization, obsessive-compulsive, hostility, and psychoticism. The BSI has demonstrated good reliability, with internal consistency values for the subscales ranging from .71 for the psychoticism subscale to .83 for the obsessive-compulsive subscale. The BSI has also been reported as having test-retest reliability values of above .80 for the global severity index (Mental Measurements Yearbook, 1990).

Childhood sexual abuse was assessed using the Early Sexual Experiences Survey (ESE; Bartoi & Kinder, 1998). The ESE was modified for the purposes of this study, to add a subjective classification question (described below), and can be found in Appendix A. This measure defines CSA as any sexual contact between a child under the age of 16 and someone at least five years older. The ESE is a 14-item measure that asks respondents to indicate whether or not they experienced various types of sexual encounters before the age of 16 using a “yes” (1) or “no” (0) format. A participant responding “no” to all of the first ten items will be treated as having no history of CSA while a participant who responds “yes” to any of the first ten items on this scale will be treated as meeting objective criteria for a history of CSA. For participants with a history of CSA, the total number of “yes” responses will be used to produce an objective CSA severity score ranging from 1-10, with 1 being the least severe and 10 being the most

severe. A subjective CSA severity classification and score was created with items 11 and 12. Item 11 asks participants “Do you consider yourself to be a victim of childhood sexual abuse?” providing a subjective classification as abused or non-abused. Item 12 asks participants to rate how severely the experience (any “yes” to items 1-11) impacted their life (0 being no negative impact at all to 10 being a severe negative impact), providing a subjective severity measure. The ESE has adequate reliability with reported internal consistency values around .79 (Young, Harford, Kinder, & Savell, 2007).

Childhood socio-economic status (SES) was computed using the Hollingshead (1975) system, which approximates childhood SES with parental education levels and an occupation score. Education is rated from 1 to 7 with 1 equal to less than a seventh grade education through 7 equal to graduate training. Occupations are scored from 1 to 9 with 1 equal to occupations such as farm laborers or menial service workers through 9 equal to occupations such as executives, proprietors of large businesses, or major professionals. Education and occupation scores are then weighted and combined into a total score, ranging from 8-66. For families with multiple incomes/caretakers, the total scores are averaged to get a single SES score for the family.

Parental bonding was assessed using the Parental Bonding Instrument (PBI) developed by Parker, Tupling and Brown (1979; appendix C). This 48-item questionnaire assesses two aspects of parental bonding, care and overprotection, by asking participants retrospectively about their childhood experiences with their parents. These factors were defined by factor analysis. In a 20-year longitudinal study, Wilhelm, Niven, Parker, & Hadzi-Pavlovic (2005) reported the PBI has adequate psychometric properties. They found the maternal care subscale of the PBI has a test-retest reliability of .75 over a 5-

year period, .64 over a 10-year period, and .73 over a 20-year period. They reported the maternal overprotection subscale as having a test-retest reliability of .75 over a 5-year period, .67 over a 10-year period, and .69 over a 20-year period. They reported the paternal care subscale as having a test-retest reliability of .82 over a 5-year period, .74 over a 10-year period, and .75 over a 20-year period. They reported the paternal overprotection subscale as having a test-retest reliability of .74 over a 5-year period, .62 over a 10-year period, and .59 over a 20-year period. The PBI was used to assess the extent to which, during a participant's childhood/adolescence, parents were overprotecting vs. allowing of autonomy and caring vs. indifferent/rejecting.

Procedure

Participants first completed the informed consent form followed by the demographics questionnaire, the Early Sexual Experiences Questionnaire, the Parental Bonding Instrument, and the Brief Symptom Inventory in a random order. All measures were filled out in one session. Participants filled out the questionnaires in groups with spacing adequate to ensure individual privacy of responses. Informed consent and questionnaire packets were kept separate from each other, and the informed consent forms were shuffled upon receipt to ensure that an informed consent form could not be matched with its corresponding questionnaire packet. Upon completion, participants were thanked, debriefed, given a chance to ask questions and express any concerns, and given referral sources if any adverse effects were experienced.

Results

The mean BSI score for the entire sample was 43.11 ($SD = 34.57$) with a maximum of 187. The PBI subscale score means for the entire sample were as follows; father care was 24.08 ($SD = 10.11$), father overprotection was 15.36 ($SD = 7.39$), mother care was 29.93 ($SD = 7.30$), and mother overprotection was 14.89 ($SD = 7.71$).

Participants were identified as having experienced CSA by the ESE-R. Of the 290 participants, 39.3% reported experiencing at least 1 incident of CSA before the age of 16 (endorsing “yes” on at least 1 ESE-R item 1-10) and were classified as experiencing CSA using the objective classification. Of these participants, 50.9% reported having sexual contact with someone at least 5 years older than them; 32.5% reported being forced into sexual activity by a perpetrator of any age; 89.5% reported being touched in a way that made them feel violated; and 14.9% reported engaging in unwanted sexual activity while too intoxicated or influenced by drugs to give consent. However, when asked “do you consider yourself to be a victim of CSA,” only 10.0% of the 290 participants answered “yes.” Only 9.6% of the objectively identified abused participants reported receiving psychological treatment in which sexual abuse was one of the issues covered. Of particular note, these results show that through objective identification, 39.3% of participants were identified as experiencing CSA while through subjective identification, only 10% were. Using an objective and subjective severity score is advantageous because it addresses the problem of the large difference between objective and subjective identification rates. The following analyses were conducted with data from the entire

sample. The sample size was sufficient that participants with missing data were simply removed from the analysis. This resulted in some variation of sample sizes.

It was hypothesized that the CSA variables would significantly correlate with each other and with the BSI total and subscale scores. To test this hypothesis, Pearson's correlation coefficients were computed between the CSA variables, the BSI total score, and the nine BSI subscale scores. The results supported the hypotheses. The objective CSA severity score and subjective CSA severity rating were significantly correlated ($r = .650, p < .001$). The objective severity score was also significantly correlated with BSI total score ($r = .255, p < .001$) and all 9 BSI subscales (minimum $r = .144, p = .015$ for the interpersonal sensitivity subscale, maximum $r = .255, p < .001$ for the somatization subscale). The subjective severity rating was also significantly correlated with BSI total score ($r = .251, p < .001$) and all 9 BSI subscales (minimum $r = .163, p = .005$ for the interpersonal sensitivity subscale, maximum $r = .262, p < .001$ for the anxiety subscale). These results are summarized in table 1.

Table 1.

Correlation matrix of CSA variables and BSI subscales

	1	2	3	4	5	6	7	8	9	10	11	12
1.CSA objective severity	--	.65**	.26*	.15*	.14*	.24**	.23**	.16*	.18*	.23**	.23**	.26**
2.CSA subjective severity		--	.24**	.17*	.16*	.19*	.26**	.17*	.23**	.24**	.23**	.25**
3.Somatization			--	.68**	.54**	.63**	.77**	.59**	.59**	.55**	.64**	.82**
4.Obs. Compulsive				--	.68**	.69**	.68**	.59**	.55**	.63**	.67**	.84**
5.Interpersonal Sensitivity					--	.74**	.63**	.62**	.56**	.72**	.73**	.83**
6. Depression						--	.71**	.64**	.54**	.69**	.82**	.88**
7.Anxiety							--	.67**	.65**	.62**	.73**	.87**
8.Hostility								--	.45**	.60**	.62**	.76**
9.Phobic Anxiety									--	.53**	.58**	.70**
10.Paranoid Ideation										--	.72**	.81**
11.Psychoticism											--	.87**
12.BSI Total												--

* $p < .01$, ** $p < .001$

Before conducting analyses using the Hollingshead childhood SES score, a one-way ANOVA was conducted to test for race/ethnicity group differences on the SES score. This test revealed that there were significant SES differences between some races/ethnicities ($F(5, 275) = 2.393, p = .038$), therefore, race/ethnicity was held constant for any analyses including SES.

It was hypothesized that significant correlations would be found between the Hollingshead childhood SES score, the PBI subscale scores, and BSI total score, so that higher SES is related to “better” (higher warmth, lower overprotection) PBI scores and lower BSI scores, and that better PBI scores are related to lower BSI scores. This hypothesis was tested by computing a Pearson’s correlation matrix including childhood

SES, PBI subscale scores, and BSI total score. The results indicate that, of these variables, childhood SES was only significantly correlated with the father care subscale of the PBI ($r = .194, p = .003$). BSI score was significantly correlated with all 4 PBI variables in the hypothesized direction, but not with childhood SES (table 2). Because SES was not even marginally correlated with BSI total score ($r = -.005, p = .993$), it was dropped from all further analyses. It was also hypothesized that parental divorce/separation during childhood would be related to higher BSI score. To test this hypothesis, a one-way ANOVA was conducted. The results indicate that parental divorce/separation during childhood was only marginally related to BSI score ($F(2,280) = 2.768, p = .064$). The results of these analyses indicated that objective CSA severity, subjective CSA severity, the 4 PBI subscales, and parental separation/divorce are all related to psychological functioning in adulthood. These variables were therefore included in the regression analysis.

Table 2.

Correlation matrix of SES, PBI subscales, and BSI total controlling for race/ethnicity

	1	2	3	4	5	6
1. SES	--	.194**	-.028	.087	.005	-.005
2. Father Care		--	-.322***	.277***	-.032	-.128*
3. Father O.P.			--	-.241***	.399***	.181**
4. Mother Care				--	-.257***	-.157**
5. Mother O.P.					--	.283***
6. BSI Total						--

* $p < .05$, ** $p < .01$, *** $p < .001$

It was hypothesized that the predictor variables, objective CSA severity, subjective CSA severity, childhood SES, the PBI subscale scores, and parental separation/divorce, would significantly predict BSI total score individually and as a

group, and that the CSA variables would significantly predict BSI score beyond the prediction made by the other variables. SES was not included in this analysis once it was found to be unrelated to BSI score. Multiple regression analyses were conducted to test these hypotheses. As hypothesized, the model including the 4 PBI subscales and parental separation/divorce significantly predicted BSI score ($R^2 = .106$, $F(5,237) = 5.601$, $p < .001$; table 3). The model including only the CSA objective and subjective severity scores also significantly predicted BSI score ($R^2 = .078$, $F(2,278) = 11.801$, $p < .001$; table 4). Also as hypothesized, the model including the parental variables, objective CSA severity, and subjective CSA severity significantly predicted BSI score ($R^2 = .174$, $F(7,233) = 6.994$, $p < .001$; table 5). An R^2 change test between the 2 regression models ($F(2,232) = 9.550$, $p < .01$) indicated that the CSA variables do add to the predictive ability of the parenting variables. However, when examining the individual contributions of the CSA variables to the model, only the subjective severity score accounts for a significant amount of unique variance beyond that accounted for by the other variables, ($\beta = .186$, $p = .021$).

Table 3.

Regression of BSI total score on PBI subscales and parental divorce/separation				
	<i>b</i>	β	<i>p</i>	Total Model
Father Care	-.243	-.068	.332	$R^2 = .106$, $F(2,237) = 5.601(5,237)$, $p < .001$
Father O.P.	.161	.033	.643	
Mother Care	-.344	-.072	.275	
Mother O.P.	1.111	.239	.001	
Parental Divorce	6.796	.106	.099	

Table 4.

Regression of BSI total score on CSA objective severity and CSA subjective severity

	<i>b</i>	β	<i>p</i>	Total Model
CSA Obj.	3.297	.158	.038	$R^2 = .078, F(2,278) = 11.801, p < .001$
CSA Subj.	2.217	.151	.048	

Table 5.

Regression of BSI total score on PBI subscales, parental divorce/separation, CSA objective severity, and CSA subjective severity

	<i>b</i>	β	<i>p</i>	Total Model
Father Care	-.161	-.045	.514	$R^2 = .174, F(7,233) = 6.994, p < .001$
Father O.P.	.133	.027	.693	
Mother Care	-.225	-.047	.466	
Mother O.P.	1.003	.215	.002	
Parental Divorce	5.646	.088	.158	
CSA Obj.	2.391	.109	.173	
CSA Subj.	2.885	.186	.021	

Discussion

This study attempted to add to the existing body of CSA literature by examining CSA's relationship with adult psychological functioning while simultaneously analyzing co-occurring childhood factors such as SES, parental care, parental overprotection, and parental divorce. It was hypothesized that lower SES, lower parental care, greater parental overprotection, and greater rate of divorce would all be associated with disordered adult psychological functioning. A major limitation of the CSA body of research is the lack of examination of co-occurring risk factors. This has led to debate as to whether CSA leads to psychopathology in adulthood, or whether this relationship would be better accounted for by other childhood risk factors. Many studies have disagreed on the exact nature of this relationship, but they have reached consensus on the necessity of examining co-occurring risk and protective factors (Merrill, Thomsen, Sinclair, Gold, & Milner, 2001; Fassler, Amodeo, Griffin, Clay, & Ellis, 2005; Higgins & McCabe, 1994).

The current study examined CSA in 2 ways, both different than the majority of existing studies. Commonly, participants are placed in "abused" or "non-abused" groups based on their endorsement of questionnaire items, or answers to interview questions. Most commonly, if a participant indicates having experienced any form of childhood abuse, they are classified as "abused." This approach has 2 main problems. The first is that what constitutes abuse varies greatly across studies. As discussed previously, this may be a reason for the range of results from one study to another. If only very severe abusive events are used to classify participants as abused, then it is more likely that the

prevalence of CSA will be lower and the outcomes will likely be more severe. The second problem with this approach is common to any study that condenses scores into dichotomous variables, and is that a great amount of variance is lost in the process. Using severity scores rather than dichotomizing “abused” and “non-abused” provides the advantages of more descriptive data and greater statistical power. The majority of existing studies also make abuse classifications based only on objective information, what abusive events actually occurred. This approach neglects the subjective nature of the victim’s own thoughts and feelings surrounding the abuse. For example, if a 15-year-old girl has a consensual sexual relationship with a 21-year-old man, many studies would classify this as abuse (indeed this would count towards the current study’s objective severity score). If the girl later felt taken advantage of, she may subjectively feel that she was abused and therefore experience guilt, depression, or any other negative psychological outcome that has been found to be related to CSA. However, if she goes on with her life, always thinking of the relationship as having been healthy and consensual, she may never suffer a negative outcome. Using a subjective severity rating of abuse provides information that may be missed when using only objective classification. The limitation of using only subjective severity ratings is that participants may be more likely to assign greater severity to past events if they are currently experiencing depression, anxiety, etc. This may artificially inflate the relationship between subjective CSA severity and current symptomology. In an attempt to maximize accuracy, descriptiveness, and statistical power while minimizing disadvantages, the current study measured CSA in 2 ways; an objective severity score and a subjective severity score. The objective score is simply how many abusive events the subject reported experiencing, while the subjective

score is a rating on how much any abuse negatively impacted their lives (ESE-R; appendix A). Results indicated that, although highly correlated ($r = .650, p < .001$), the objective and subjective severity ratings do appear to be measuring different constructs.

Analysis of the objective and subjective CSA severity scores confirmed the hypothesis that they would be related to adult psychological functioning. While most prior research on CSA (ex. Kendall-Tackett, Williams, & Finkelhor, 1993) has shown that those having experienced CSA are more likely to have psychopathology in adulthood, the results of the current study extend these findings by showing that both objective and subjective severity ratings are positively correlated with number of symptoms of psychopathology. As severity of abuse, both objectively and subjectively measured, increases, adult psychological functioning becomes more impaired. This result was found for all the BSI subscales; depression, interpersonal sensitivity, anxiety, phobic anxiety, paranoid ideation, somatization, obsessive-compulsive, hostility, and psychoticism.

Results of the current study showed that the parental care and overprotection variables were all significantly correlated with adult psychological functioning. This finding supports the hypotheses and agrees with past research (ex. Enns, Cox, and Clara, 2002). It appears that higher parental care during childhood acts as a protective factor for developing psychopathology in adulthood. It also appears that parental overprotection puts children at higher risk for developing psychopathology in adulthood. Parental divorce before the child turned 18 was found to be marginally related to BSI score, possibly increasing the risk of psychopathology during adulthood. This finding agreed with previous findings by Ge, Natsuaki, and Conger (2006), that parental divorce

predicted depressive symptoms among adolescents, but that the effect disappeared in adulthood for women. Since the current study used a sample of young women, this marginal finding may be explained by the young age of participants, many of them having recently been adolescents.

SES has been linked with many risk and protective factors in childhood. Although Evans (2004) found that higher SES was associated with many childhood advantages including greater parental support and greater cognitive stimulation, he did not discuss a link between lower childhood SES and psychological functioning. It had been hypothesized that childhood SES would be related to, and perhaps even interact with, CSA to predict adult psychological functioning. As SES was not even marginally related to adult psychological functioning, the hypothesis was not supported and SES was dropped from all analyses. One potential explanation for this finding is that the participants were all undergraduate students at a major university in Florida. Simply being college students limits the range of childhood SES because having low SES limits college attendance. This range restriction could account for the findings. Another possibility is that childhood SES is not related to adult psychological functioning as measured by the BSI. The BSI assessment tool focuses on symptoms and traits related to psychopathology. It appears that childhood SES is not related to adult psychopathology among people who are of high enough SES to go to college. It is possible that a replication of this study using a more economically diverse sample would find a relationship between childhood SES and adult psychological functioning. It is also possible that a study measuring another psychological outcome variable, such as IQ score, would find a relationship with childhood SES. For the current study, any

hypothesis regarding SES was not supported and analysis was limited to the other variables.

This study attempted to contribute to the body of CSA literature by assessing multiple childhood factors simultaneously, including parenting variables and CSA, allowing the researchers to quantify and compare the predictive power of these factors on adult psychological functioning. The results of the correlational analysis established that all of the predictor variables could significantly predict BSI score. The larger regression models were constructed to show the predictive power of these variables as a group, and examine any overlap in predicted variance. The results showed that a regression model including mother care and overprotection, father care and overprotection, and parental divorce, accounted for approximately 11% of variance in adult psychological functioning as measured by the BSI. The amount of overlap was very high among these variables, with only mother overprotection accounting for a significant amount of unique variance. The model including only the abuse severity variables accounted for approximately 8% of the variance in adult psychological functioning. Both objective and subjective severity scores accounted for a significant amount of unique variance in this model. The model including all predictor variables accounted for approximately 17% of the variance in adult psychological functioning. Again, the amounts of overlap were very high. Subjective, not objective, CSA severity score accounted for a significant amount of unique variance in to model with all predictors. As hypothesized, the significant increase in the R^2 indicates that CSA accounts for variance in adult psychological functioning beyond that accounted for by the parenting variables. Comparing the objective and subjective CSA severity scores provides interesting information. As already discussed,

the correlation between the 2 was moderately high, but not high enough to indicate that the variables measured exactly the same construct. Results of the regression analysis indicated that the 2 scores did not overlap as much as might be expected (both accounted for a significant amount of unique variance in the regression model using only the CSA severity scores) in the prediction of adult psychological functioning. Therefore, this study supports the use of not only severity ratings (instead of assigning participants to dichotomous groups), but also the use of both objective and subjective severity measures of CSA.

When examined as a whole, such as with prior meta-analysis of 45 studies by Kendall-Tackett, Williams, & Finkelhor (1993), the body of literature on CSA does indicate that CSA is related to negative psychological outcomes in adulthood, but these results vary greatly in the strength of this relationship. Researchers have hypothesized that this was because of differing definitions of CSA, and varying levels of examination of other risk factors (Fassler, Amodeo, Griffin, Clay, & Ellis, 2005; Higgins & McCabe, 1994; Merrill, Thomsen, Sinclair, Gold, & Milner, 2001; Romans, Martin, & Mullen, 1997; Young, Harford, Kinder, & Savell, 2007). The current study addressed these limitations in 2 ways, by using severity scores to address problems with defining abused vs. non-abused, and by examining the prediction of multiple risk/protective factors simultaneously.

Addressing the larger issue; does CSA alone necessarily lead to negative psychological outcomes? Kendall-Tackett, Williams, and Finkelhor (1993) found that among 45 studies, CSA accounted for 15-45% of variance in adult psychological functioning. Given the variation in outcomes of CSA, they conclude, "...the absence of

any specific syndrome in children who have been sexually abused, and no single traumatizing process.” Their findings seem to indicate that CSA accounts for large amounts of variance in adult psychological functioning, but that CSA does not act through a simple process. Rather, it can have influence through many processes and its outcomes vary greatly. In another review, Putnam (2003) found that CSA appears to be related to a wide variety of negative psychological outcomes in adulthood. Romans, Martin, and Mullen (1997) even go so far as to conclude that “CSA is best conceptualized as a non-specific risk factor for a wide range of psychological...outcomes.” The current study attempted to measure some of the other potential co-occurring risk factors and quantify their influence in comparison with CSA. Results indicated the parenting variables such as care, overprotection, and divorce are also related to negative psychological outcomes in adulthood, and account for similar amounts of variance (to CSA) in these outcomes. The current findings also indicate that, as hypothesized, the amounts of shared variance between the parenting variables and CSA were quite high, but that CSA did account for a significant amount of variance in adult psychological functioning beyond that of the other variables.

The current study supports using severity scores instead of dichotomous groups in future research. It also highlights the need to examine multiple risk-factors simultaneously. The current study used only female participants, therefore, future research should be conducted to examine if these findings generalize to men. Future research should also examine other potential childhood factors that may be related to CSA and predict adult psychological functioning. Such factors include education, living situation, parental psychopathology, and many others that could all show results similar

to those in this study. Other types of abuse or neglect may also predict psychopathology in adulthood while being related to CSA and other risk factors. Once a great number of risk factors are identified, interventions for victims of CSA will be able to take into account those factors that appear to have the most significant impact on the victims.

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Appendices

Appendix A

Early Sexual Experiences Survey (Bartoi & Kinder, 1998)

We would like to get an idea about the type of sexual experiences you may have had before the age of 16 (15 and younger). Please answer yes or no to the following questions in terms of that time.

<u>Before the age of 16 (15 and younger)</u>	<u>No</u>	<u>Yes</u>
1. Did you ever touch the genitals of someone at least 5 years older than you?	0	1
2. Did someone at least 5 years older than you ever touch your genitals or breasts (besides for a physical examination)?	0	1
3. Did you engage in oral sex (cunnilingus and/or fellatio) with someone at least 5 years older than you?	0	1
4. Did you engage in vaginal intercourse with someone at least 5 years older than you?	0	1
5. Did you engage in anal intercourse with someone at least 5 years older than you?	0	1
6. Were you forced into genital manipulation that was unwanted by anyone of any age?	0	1
7. Were you forced into oral sex (cunnilingus and/or fellatio) that was unwanted by anyone of any age?	0	1
8. Were you forced into anal intercourse that was unwanted by anyone of any age?	0	1
9. Were you ever touched in a way that made you feel violated?	0	1
10. Did you engage in any unwanted sexual activity while too intoxicated or influenced by drugs to give consent?	0	1
11. Do you consider yourself to be a victim of childhood sexual abuse?	0	1
12. If you answered "yes" to ANY of the above questions, please rate the extent to which your experience had a negative impact on your life (0 being no negative impact at all, 5 being a moderate negative impact, and 10 being a severe negative impact; CIRCLE ONE)	0	1 2 3 4 5 6 7 8 9 10
13. Did you ever receive psychological treatment?	0	1
14. If yes, was sexual abuse one of the issues covered?	0	1

Appendix B

Demographic Information

1. Age in years: _____

2. Preferred ethnic / racial designation:

- | | |
|---|---|
| <input type="checkbox"/> African-American (Black) | <input type="checkbox"/> Asian-American |
| <input type="checkbox"/> Caucasian (White) | <input type="checkbox"/> Latino (Hispanic) |
| <input type="checkbox"/> Multiracial | <input type="checkbox"/> Native American (Indian) |

Specify if not listed: _____

3. Current romantic relationship status:

- | | |
|--|-----------------------------------|
| <input type="checkbox"/> Single | <input type="checkbox"/> Married |
| <input type="checkbox"/> In a relationship | <input type="checkbox"/> Divorced |
| <input type="checkbox"/> Engaged | |

4. Check all the experiences you had before the age of 16:

- Hospitalization for physical illness
- Hospitalization for psychiatric illness
- Major accident or injury
- Handicap or disability
- Out-of-home placement
- Death of parent
- Parental separation or divorce

If you checked box above, please indicate your age when the divorce or separation occurred: _____

- Imprisonment of a parent
- Death of a sibling
- Loss of a sibling through separation or divorce
- Department of Social Services involvement
- Juvenile justice system involvement
- Other agency involvement (please specify _____)

5. Which of the following best describes your most typical living situation during each of the following age ranges:

Birth to 6 Years 7-12 Years 13 Years & Older

- With both natural parents
- With a natural parent & a step-parent
- With a single natural parent
- With an adoptive parent
- With a foster family
- With grandparents or other relatives

6. Number of younger siblings living in the home during each of the following age ranges:

Birth to 6 years 7-12 Years 13 Years & Older
 _____ _____ _____

7. Number of older siblings living in the home during each of the following age ranges:

Birth to 6 years 7-12 Years 13 Years & Older
 _____ _____ _____

8. Check all special academic placements you had while in school:

- None
- Advanced Placement
- Gifted and Talented
- Educationally handicapped
- Learning disabled
- Homebound
- Vocational rehab
- Other (please specify _____)

9. While growing up, did you regularly attend a place of worship?

- Yes No

10. While growing up, what was the highest education achieved by your primary parent(s)/guardian(s)?
 (examples: high school diploma, GED, bachelor's degree, master's degree, PhD)

Parent/guardian 1: _____

Parent/guardian 2: _____

11. While growing up, what was your primary parent(s)/guardian(s) occupation?

(if more than 1 occupation, please write in the occupation done for the largest amount of time during your childhood)

Parent/guardian 1: _____

Parent/guardian 2: _____

Appendix C

FATHER FORM

This questionnaire lists various attitudes and behaviours of parents. As you remember your FATHER in your first 16 years would you place a tick in the most appropriate box next to each question.

	Very like	Moderately like	Moderately unlike	Very unlike
1. Spoke to me in a warm and friendly voice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did not help me as much as I needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Let me do those things I liked doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Seemed emotionally cold to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Appeared to understand my problems and worries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was affectionate to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Liked me to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did not want me to grow up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Tried to control everything I did	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Invaded my privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Enjoyed talking things over with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently smiled at me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tended to baby me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Did not seem to understand what I needed or wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Let me decide things for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Made me feel I wasn't wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Could make me feel better when I was upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Did not talk with me very much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Tried to make me feel dependent of her/him	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Felt I could not look after myself unless she/he was around	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Gave me as much freedom as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Let me go out as often as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was overprotective of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Did not praise me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Let me dress in any way I pleased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>