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Protective processes for depressed mood and anger among sexually abused adolescents: The importance of self-esteem

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ABSTRACT

The aim of the study was to investigate the protective processes for depressed mood and anger among sexually abused adolescents. A cross-sectional anonymous self-report national survey was conducted including 9113 16–19-year-old students attending all upper secondary schools in Iceland in 2004. Correlations and multiple linear regression models were carried out to test for main, interaction and mediating effects. The results showed that parental support, positive attitudes towards school and sport participation negatively predicted depressed mood and anger (main effects). Self-esteem however, turned out to be a stronger negative predictor of depressed mood and anger for sexually abused adolescents than for non-abused adolescents (interaction effect). Finally, self-esteem mediated the effects of parental support, attitudes towards school and sport participation on depressed mood and anger. These results underscore the specific importance of self-esteem when predicting depressed mood and anger among sexually abused adolescents. They also indicate that parental support, attitudes towards school and sport participation are important predictors of these emotional problems, both directly and indirectly through their effects on self-esteem.

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1. Introduction

Numerous empirical studies have demonstrated a link between sexual abuse and emotional problems such as depressed mood and anger (Kendall-Tackett, Williams, & Finkelhor, 1993; Turner, Finkelhor, & Ormrod, 2006). While some studies have questioned the deleterious effects of sexual abuse (Rind, Tromovitch, & Bauserman, 1998), recent studies among twins have given strong support for the hypothesis that sexual abuse is strongly associated with psychopathology, such as depression (Kendler et al., 2000; Nelson et al., 2002).

However, not all children and adolescents subjected to sexually abusive experiences develop emotional problems or psychopathology (Kendall-Tackett et al., 1993). While some may suffer from mental health problems following sexually abusive experiences, others may be resilient and not develop such problems. Resilient people are relatively well-adapted individuals in spite of difficult or challenging life experiences (Luthar, Cicchetti, & Becker, 2000; Rutter, 2006). The processes that resilience researchers aim to understand are those that account for good outcomes among

individuals at risk. The terms 'protective factors' and 'vulnerability factors' are used to describe the factors and their underlying processes that might alter or modify the negative effects of adversity, either for better (protective) or for worse (vulnerability) (Luthar et al., 2000). It has been suggested that salient protective and vulnerability processes that affect at-risk children operate on three broad interrelated levels; the individual, family and community level. This perspective emphasizes how children themselves (individual level), aspects of their families (family level), and characteristics of their wider social environments (community level) may interact with stress and protect them from negative outcomes (Garmezy, 1985; Luthar et al., 2000; Masten & Garmezy, 1985; Werner, 1992).

1.1. Resilience among sexually abused individuals

Research has suggested that high self-esteem may be of particular importance for resilient outcomes among sexually abused individuals (Jonzon & Lindblad, 2006; Valentine & Feinauer, 1993). High self-esteem has been hypothesized to have beneficial effects through coping and attributions processes (Cicchetti, Rogosch, Lynch, & Holt, 1993; Masten & Garmezy, 1985; Rutter, 1985). There is evidence suggesting that self-esteem serves a protective function for psychological symptoms among children and adolescents at risk (Kliewer & Sandler, 1992; Moran &

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Eckenrode, 1992), but studies testing interaction effects are lacking among sexually abused adolescents. In a recent review of the literature the possibly buffering role of self-esteem on health among sexually abused individuals was discussed and highlighted as an important area for future research (Maniglio, 2009).

Family related factors also seem to play an important role when predicting resilient outcome among sexually abused individuals (Eisenberg, Ackard, & Resnick, 2007; Fassler, Amodeo, Griffin, Clay, & Ellis, 2005). In particular, parental support and attachment has turned out to predict better mental health outcome (Lynskey & Fergusson, 1997; Spaccarelli & Kim, 1995). Only a few studies have gone beyond looking at the social influences of the family, indicating that positive attitudes towards school and involvement in traditional activities predict better outcome among sexually abused individuals (Eisenberg et al., 2007; Pharris, Resnick, & Blum, 1997). None of these studies have tested the interaction effects between sexual abuse and these individual, family and wider community level variables in the same model.

1.2. The interrelation between individual, family and community level processes

Self-esteem has a genetic component (Neiss, Stevenson, Legrand, Iacono, & Sedikides, 2009) and is shaped and modified from childhood through the adolescent's life by social experiences, within and outside the family (Gore & Eckenrode, 1996; Rutter, 1985, 1987). Important factors that shape self-esteem are parental and peer support (Ross & Broh, 2000; Walker & Greene, 1986), positive perception of school climate (Hoge, Smit, & Hanson, 1990; Way & Robinson, 2003) and participation in sport activities (Fletcher, Nickerson, & Wright, 2003; Slutzky & Simpkins, 2009). There is support for the hypothesis that self-esteem is an important mediator between social support and emotional adjustment in early and late adolescence (DuBois et al., 2002; Gaylord-Harden, Ragsdale, Mandara, Richards, & Petersen, 2007). Accordingly, it is likely that the protective function of family and community processes is manifested, at least in part, through the individual's self-esteem. We test this in the current study.

1.3. The aim of this study

The aim of the study was to investigate the protective processes for depressed mood and anger among sexually abused adolescents. In particular, the effects of self-esteem, parental support, attitudes towards school and sport participation were investigated. Furthermore, it was tested whether self-esteem mediated the effects of family and community factors on depressed mood and anger. Finally, since studies have indicated a gender difference in the impact of sexual abuse, self-esteem and social support on psychological problems (Gore & Eckenrode, 1996; Pritchard, 2010; Sigfusdottir, Asgeirsdottir, Gudjonsson, & Sigurdsson, 2008) it was also tested whether the effects of sexual abuse, self-esteem, parental support, attitude towards school and sport participation on emotional problems differed between the genders.

Potentially confounding demographic variables were controlled for in the study, including gender, age, family structure, socioeconomic status and family conflict (Finkelhor, 1993; Turner et al., 2006).

2. Method

2.1. Participants and procedure

A cross-sectional national survey was conducted in all upper secondary schools in Iceland. Participants consisted of all 16–

19-year-old students present in class on October 20th in 2004. A total of 9113 individuals participated, with a mean age of 17.2 years ($SD = 1.1$). Of those, 4652 (51%) were females (mean age = 17.2; $SD = 1.1$) and 4433 (49%) were males (mean age = 17.1; $SD = 1.1$) (28 did not report their gender). This sample represented 67% of all registered students in this age group in Iceland and approximately 80% of all full time students in this age-group who, according to school registrations, should have been present on the day of administration. The questionnaires, which were anonymous and put in blank envelopes upon completion, were administered by teachers. The data collection was conducted in accordance with the Privacy and Data Protection Authority in Iceland by and under the direction of the Icelandic Centre for Social Research and Analysis in cooperation with the Government Agency for Child Protection. Participants were not financially compensated for completing the questionnaire. They were specifically informed about the sensitivity of some questions in the survey and told that they were free not to participate and could withdraw at any time.

2.2. Measures

2.2.1. Demographic variables

The demographic variables included gender (1 = "males", 2 = "females"), age, family structure (0 = "Living with both biological parents", 1 = "Living in other family arrangements") and mothers' and fathers' education, used as an indicator of socioeconomic status (responses ranged from 0 to 4 with higher scores indicating higher level of education) (Sigfusdottir et al., 2008). Experiencing family conflict was assessed with four questions, asking whether the participants had ever: "Witnessed severe arguments between parents", "Had severe arguments with parents", "Witnessed physical violence at home including an adult", or "Experienced physical violence at home, including an adult". Each statement was rated either present or absent, added together higher level indicated more types of family conflict experienced.

2.2.2. Sexual abuse

Five questions were used to measure sexually abusive experience before the age of 18 (Mossige, 2004; Sigfusdottir et al., 2008). The five questions asked whether the participants had ever been exposed to any of the following sexual acts against their will: "Somebody exposed him/herself indecently towards you", "Somebody touched your body, excluding genitals, in an indecent way", "Somebody touched your genitals", "Somebody persuaded, pressed or forced you to touch his/her genitals", "Somebody persuaded you, pressed or forced you to have intercourse". Those who responded yes to any of these questions were allocated the value 1 and those who answered no to all were allocated the value 0.

2.2.3. Protective factors

Protective factors were *parental support* (Gudjonsson, Sigurdsson, Sigfusdottir, & Asgeirsdottir, 2008), a measure consisting of five questions on how difficult or easy it is for the adolescents to get warmth and caring, discussions about personal affairs and personal advice from their parents (responses to each statement ranged from 0 to 3 with higher scores indicating more support), *attitudes towards school* (Gudjonsson et al., 2008), a measure consisting of 14 questions on attitudes and feelings towards school, school work, teachers and fellow students (response to each statement ranged from 0 to 4 with higher scores indicating more positive attitudes towards school) and *sport participation*, a measure consisting of four questions on sports and physical training within and out of schools and sport clubs (responses to each statement ranged from 0 to 5 with higher scores indicating more sport participation). Finally, *self-esteem* was measured with the 10 statements from the Rosenberg

Self-Esteem Scale (Rosenberg, 1965). Responses to each statement ranged from 0 to 3 with higher scores indicating a higher level of global self-esteem (Gudjonsson et al., 2008).

2.2.4. Depressed mood and anger

Eight items were chosen from the original symptom distress checklist (Derogatis, Lipman, Covi, & Rickels, 1971) to assess the severity of depressed mood (each statement ranged from 0 to 3, with higher scores indicating more severity) and five items were used to assess the severity of anger problems (Derogatis, Lipman, & Covi, 1973) (each statement ranged from 0 to 3, with higher scores indicating more severity).

2.3. Statistical analysis

Resilience has been defined as belonging to the rubric of the so-called stress buffering models (Gore & Eckenrode, 1996). The predominant approach to test buffering effects has been to test for a statistical interaction between a stressor and a protective factor (Gore & Eckenrode, 1996). In the current study, main and interaction effects were tested by the use of multiple linear regressions, in accordance to suggestions by Baron and Kenny (1986). The statistical analysis was undertaken in six blockwise models for the two dependent variables depressed mood and anger. The first block included the control variables (Model 1), in the second block the effects of sexual abuse were added (Model 2), in the third block the effects of parental support were added (Model 3), in the fourth the effects of attitudes towards school and sport participation were added (Model 4) and in the fifth block the self-esteem measure was added (Model 5). Finally, in the sixth and final block (Model 6) it was tested whether the interaction terms (e.g. sexual abuse \times hypothesized buffer) added significantly to the explained variance of depressed mood and anger after the main effects had been controlled for. The assumptions of multiple regression were tested for these models and were met.

Finally, to test for the possible mediational pathway from family and community variables to emotional problems through self-esteem, the four steps designed by Baron and Kenny (1986)

Table 1
Descriptive statistics for scales used in the study.

Variables	N	Mean	SD	Range	Cronbach's alpha
Parental education	8015	4.38	2.44	0–8	.62
Parental support	8996	12.26	2.97	0–15	.87
Attitudes towards school	8840	39.99	7.06	4–56	.84
Sport participation	8609	7.20	5.11	0–20	.75
Self-esteem	8797	21.70	5.96	0–30	.90
Depressed mood	8873	8.58	5.53	0–24	.89
Anger	8978	3.28	3.20	0–15	.82

Table 2
Pearson *r* bivariate correlations for the variables in the study.

	1	2	3	4	5	6	7	8	9	10	11
1. Age	1.000										
2. Family structure	-.046**	1.000									
3. Education of parents	.038*	.064**	1.000								
4. Family conflict	.016	-.224**	-.029	1.000							
5. Sexual abuse	-.032*	-.073**	-.045**	.191**	1.000						
6. Parental support	.005	.151**	.176**	-.262**	-.088**	1.000					
7. Attitudes towards school	-.045**	.053**	.120**	-.201**	-.121**	.288**	1.000				
8. Sport participation	-.023	.087**	.077**	-.047**	-.047**	.079**	.129**	1.000			
9. Self-esteem	.058**	.057**	.131**	-.196**	-.161**	.291**	.453**	.167**	1.000		
10. Depressed mood	.049*	-.095**	-.033*	.250**	.208**	-.245**	-.463**	-.155**	-.584**	1.000	
11. Anger	-.046**	-.065**	-.071**	.288**	.183**	-.204**	-.348**	-.057**	-.398**	.535**	1.000

* $p < 0.01$ (two-tailed test).

** $p < 0.001$ (two-tailed test).

were used. They were followed up by the Sobel test to calculate the critical ratio as a test of whether the indirect effects via self-esteem were significantly different from zero (Baron & Kenny, 1986). The following Aroian test version of the Sobel test was used as recommended by Baron and Kenny (1986) with z -value = $a * b / \text{SQRT}(b^2 * s_a^2 + a^2 * s_b^2 + s_a^2 * s_b^2)$, whereas a is the path from the independent variable to the mediator, with standard error s_a and the path from the mediator to the dependent variable is b with the standard error s_b .

3. Results

The descriptive statistics and Cronbach's alpha for scales used in the study are shown in Table 1. The results for Cronbach's alpha indicated good reliability of the measures used in the study.

The correlation matrix in Table 2 demonstrates that sexual abuse is related to all the variables used in the study. In particular, sexual abuse is positively related to depressed mood ($r = .21$, $p < .001$) and anger ($r = .18$, $p < .001$) and negatively related to self-esteem, parental support, attitudes towards school and sport participation. Furthermore, self-esteem is strongly and negatively related to both depressed mood ($r = -.58$, $p < .001$) and anger ($r = -.40$, $p < .001$).

3.1. Main effects

In Table 3 the multivariate linear regression models are presented predicting depressed mood and anger. Looking at Model 5 in Table 3 the results show that sexual abuse had weak but significant main effects on depressed mood ($\beta = .08$, $p < .001$) and anger ($\beta = .08$, $p < .001$) when influences of all the other variables had been accounted for. Furthermore, the results indicate strong and significant main effects of self-esteem on depressed mood ($\beta = -.42$, $p < .001$) and anger ($\beta = -.26$, $p < .001$). The main effects of parental support were weak but significant for depressed mood ($\beta = -.05$, $p < .001$) but not anger. Attitudes towards school exerted a much stronger negative effect on depressed mood ($\beta = -.26$, $p < .001$) and anger ($\beta = -.19$, $p < .001$) than parental support. Finally, sport participation had weak negative effects on depressed mood ($\beta = -.03$, $p < .001$) but did not exert an independent effect on anger.

3.2. Mediation effects

A Sobel test revealed that self-esteem partially mediated the effects of parental support ($z = -14.8$, $p < .001$), attitudes towards school ($z = -27.3$, $p < .001$) and sport participation ($z = -5.8$, $p < .001$) on depressed mood (see Models 3–5 for de-

Table 3
Multivariate linear regression models, predicting depressed mood and anger.

Demographic variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	β		β		β		β		β		β	
	Depressed mood	Anger	Depressed mood	Anger	Depressed mood	Anger	Depressed mood	Anger	Depressed mood	Anger	Depressed mood	Anger
Gender	.17**	.06**	.14**	.04*	.17**	.06**	.18**	.07**	.08**	.01	.08**	.01
Age	.03*	-.05**	.04*	-.05**	.04*	-.05**	.02	-.06**	.05**	-.05**	.05**	-.04**
Family structure	-.02	.01	-.01	.01	.01	.02	-.01	.01	-.01	.01	-.01	.01
Education parents	-.02	-.06**	-.01	-.05**	.02	-.03	.06**	-.01	.07**	.00	.07**	.00
Family conflict	.23**	.28**	.20**	.26**	.15**	.23**	.09**	.19**	.08**	.18**	.07**	.18**
<i>Sexual abuse</i>												
Sexual abuse			.14**	.12**	.13**	.11**	.09**	.09**	.08**	.08**	.07**	.07**
<i>Protective factors</i>												
Parental support					-.22**	-.13**	-.12**	-.07**	-.05**	-.02	-.05**	-.02
Attitudes towards school							-.43**	-.29**	-.26**	-.19**	-.26**	-.19**
Sport participation							-.05**	.02	-.03*	.02	-.03*	.02
Self-esteem									-.42**	-.26**	-.42**	-.25**
<i>Interactions</i>												
Sexual abuse * parental support											.00	.00
Sexual abuse * attitudes to school											.01	.01
Sexual abuse * sport participation											.00	-.02
Sexual abuse * self-esteem											-.05**	-.04*
Adj. R square (%)	9	9	11	10	15	12	32	19	44	24	44	24
F	129.0**	131.2**	131.6**	127.3**	164.1**	127.1**	340.6**	178.3**	515.8**	209.0**	370.9**	150.9**

β = Beta, standardized coefficient.

* $p < 0.01$ (two-tailed test).

** $p < 0.001$ (two-tailed test).

pressed mood in Table 3). Furthermore, self-esteem fully mediated the link between parental support and anger ($z = -12.1, p < .001$) and partially mediated the link between attitudes towards school and anger ($z = -16.7, p < .001$) (see Models 3–5 for anger in Table 3).

3.3. Interaction effects

In Model 6 Table 3 the interaction terms were included in the models. Self-esteem turned out to be a stronger independent predictor of depressed mood ($\beta = -.05, p < .001$) and anger ($\beta = -.04, p < .01$) among sexually abused adolescents than among non-abused individuals. Although the interactions may seem weak it has been emphasized that interaction effects tested in non-experimental studies are very difficult to detect (McClelland & Judd, 1993). The other interactions tested did not add significantly to the models predicting depressed mood and anger. To further test for the independent effects of the interaction terms, we ran the models described above using stepwise multiple regression. The results supported our previous results and showed that self-esteem was the single most important independent predictor of depressed mood and anger, serving a buffering role (significant interaction) for both depressed mood and anger among sexually abused individuals (results not demonstrated in a table).

Finally, gender and sexual abuse interacted in their effects on depressed mood, whereas the effects of sexual abuse were stronger for females than males ($\beta = .03, p < .05$). Furthermore, gender interacted with attitudes towards school ($\beta = -.02, p < .05$) and self-esteem ($\beta = -.02, p < .05$) in its effects on depressed mood, indicating stronger effects for females than for males. Gender also interacted with sport participation for depressed mood, whereas sport participation was a stronger negative predictor for depressed mood among males than among females ($\beta = -.02, p < .05$). When third level interactions were included in the model no significant interactions were found, indicating that gender differences were similar for non-abused and abused adolescents.

4. Discussion

The current findings suggest that high self-esteem, positive attitudes towards school, parental support, and sport participation independently predict a reduced likelihood of depressed mood among adolescents. Furthermore, they indicate that high self-esteem and positive attitudes towards school independently predict a reduced likelihood of anger. These results are in accordance with studies highlighting the importance of positive school experiences for adolescents' psychological well being (Hoge et al., 1990; Way & Robinson, 2003) as well as with studies manifesting low global self-esteem as an important precursor of depression among adolescents (Orth, Robins, & Roberts, 2008). Interestingly, when controlling for the individual, family and community level variables sexual abuse still exerted a significant, but weak effect on depressed mood and anger. These results indicate that sexual abuse has independent effects on psychological adjustment over and above the effects of the general family environment (Kendler et al., 2000; Nelson et al., 2002).

Of key interest was whether individual, family and community factors protected (buffered) against the effects of sexual abuse on depressed mood and anger. This turned out to be the case for self-esteem, whereas self-esteem interacted with sexual abuse in its effects on both depressed mood and anger. This stress buffering effect of global self-esteem on emotional problems has been documented in the literature for adolescents subjected to maltreatment (Moran & Eckenrode, 1992) and negative life events (Kliewer & Sandler, 1992). These results are also in accordance to studies indicating that self-esteem is of special importance to those who are subjected to sexual abuse (Jonzon & Lindblad, 2006; Maniglio, 2009; Valentine & Feinauer, 1993) and further confirm that high self-esteem counteracts negative influences of sexual abuse on depressed mood and anger.

The findings indicated that global self-esteem mediated the effects of parental support and attitudes towards school on depressed mood and anger as well as the effects of sport participation

on depressed mood. This is in accordance to studies indicating that self-esteem mediates the effects of social support on emotional adjustment (DuBois et al., 2002; Gaylord-Harden et al., 2007). The results furthermore lend support to the hypotheses that sport participation reduces the likelihood of depressed mood through its positive influence on adolescents' global self-esteem (Gore, Farrell, & Gordon, 2001).

Finally, the main gender differences observed showed that sport participation was a stronger negative predictor of depressed mood among males while self-esteem and positive attitudes towards school were stronger negative predictors of depressed mood among females than males. These results are in accordance to recent studies indicating that self-esteem may have greater effect on females' than males' psychological problems (Pritchard, 2010). Furthermore, they indicate that females may be more sensitive than males to feedback from social ties, both directly from their social experiences (such as their school environment), and indirectly through the effects of social experiences on their self-esteem (Gore & Eckenrode, 1996).

4.1. Limitations

The main limitation of the current study is that it is impossible to draw inferences about the temporal relations among the constructs studied because of the cross-sectional nature of the data. Secondly, the study relies on self-report measures, where recall biases and inaccuracy of reported behaviours cannot be ruled out. Thirdly, 10.8% of the participants did not answer the questions on sexual abuse; the reasons for not answering are unknown. The greatest strengths of the study are the large sample size, anonymity of the responders, the national and geographical representative nature of the data and the participation of both genders.

4.2. Implications and conclusions

The present findings demonstrate the theoretical importance of individual, family and community level processes when predicting emotional problems among sexually abused adolescents (Garmezy, 1985; Werner, 1992). To fully understand how sexual abuse, protective and vulnerability factors interact and contribute to outcome, a more comprehensive etiological model of sexual abuse needs to be developed including other important biological, psychological and social factors (Maniglio, 2009).

On an individual level the current study underlines the importance of treatment programmes for sexually abused individuals, aiming at reducing their emotional problems and enhancing the function of protective factors, such as self-esteem (Maniglio, 2009). The current results suggest that by increasing individuals' social support, positive school experiences and participation in sports, self-esteem may be enhanced, hence protecting against depressed mood and anger. These results give implications for policy by underlining the importance of building up supportive family, school and sports environments for children and adolescents. Professionals' recognition of sexual abuse, their understanding of its consequences and compensatory factors is of key importance for intervention on a community level.

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