Psychosocial functioning of adolescents with and without paediatric Bipolar Disorder

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Abstract

Background: While there has been a growing interest in the presentation of Bipolar Disorder (BD) in children and adolescents, few studies have investigated the psychosocial functioning of these individuals and its relationship to trauma and suicidal ideation. *Methods*: 63 adolescents aged 13-17 participated: 39 controls and 24 with Bipolar Disorder (BD). Group allocation and histories of trauma and suicidal ideation were obtained using the K-SADS-PL and WASH-U-KSADS. Adolescents completed questionnaires covering negative life events, self-esteem, hopelessness, regulation of anger, locus of control and coping. *Results*: More traumatic events and negative life experiences were reported by the BD group with over 50% of the BD sample indicating a history of trauma compared with 10% of the controls. The BD group reported lower self-esteem, more hopelessness, more negative life events, a more external locus of control and greater difficulties regulating emotion in anger-provoking situations. They were also found to have poorer coping strategies than the controls. Histories of trauma did not differentiate those with and without psychosocial problems. Further, hopelessness was found to be the best predictor of those BD adolescents reporting suicidal ideation. Comorbidity could not account for the differences found. *Limitations*: The sample was small and therefore disallowed comparisons among subtypes of BD. Cross-sectional design limited the ability to investigate causal relationships. *Conclusions*: This is the first study to document the widespread psychosocial difficulties facing youth with BD, highlighting these issues as important ones to explore during assessment and treatment, particularly in management of affective storms and suicidal risk.

KEY WORDS: Bipolar Disorder; psychosocial functioning; paediatrics

Psychosocial functioning of adolescents with and without paediatric Bipolar Disorder

Paediatric Bipolar Disorder (BD) has been the focus of a growing body of research but there have been few investigations into the psychosocial functioning of young people diagnosed with BD. Given the chronic nature of the illness, the alarmingly high rate of suicides in the BD population, and the well documented role that stress can have on triggering the onset of the illness, particularly in younger bipolar patients (Hays et al., 1998), knowledge about psychosocial issues facing BD adolescents will be essential in both documenting likely triggers and aiding clinicians with designing effective interventions (McClure et al., 2002).

Our knowledge of paediatric BD is largely driven by the adult literature. While genetic and biological factors undeniably play a role in the onset and maintenance of the disorder, they cannot fully account for the variability in frequency of symptoms, response to medications, treatment adherence, and expression of the disorder. A few studies have investigated psychosocial variables in adult patients with BD. For example, cognitive styles, such as attributional styles, dysfunctional attitudes and negative self-referent information, have been found to interact with life events to predict increases in manic symptoms (Reilly-Harrington et al., 1999). Another sample of BD adults showed greater difficulties finding solutions to social problems and showed higher levels of dysfunctional attitudes and sociotropy as compared with controls (Scott et al., 2000). A further study found that BD individuals with severe negative life events have been found to take longer to recover from episodes than those without severe life events (Johnson and Miller, 1997). Life stressors have also been found to frequently precede the first episode of an affective disorder (Johnson, et al., 2000).

To date, there has been only one study investigating the psychosocial functioning of BD youth. Geller and her colleagues (2000) compared the psychosocial functioning of an early adolescent BD sample with an ADHD sample and a community control sample. They found that

the subjects with BD had significantly greater impairment in maternal and peer relationships as compared with the other two groups.

This is the first study to explore intra-individual psychosocial variables, including self-esteem, coping strategies, locus of control, hopelessness, impact of stressful life events, and regulation of anger in a group of BD adolescents compared with a community control group. The relationship between these variables and trauma histories and suicidal behaviours was also investigated in the BD group. This focus on intra-individual variables as opposed to external psychosocial variables (such as relationships, stressors) serves to begin the documentation of the psychological vulnerabilities in this population that could be included in treatment plans.

Method

The final sample consisted of 63 participants: 39 controls (17 males, 22 females), and 24 Bipolar Disorder (10 males, 14 females). Participants were aged 13 to 17. Younger and male adolescents assessed for the control group were randomly excluded from a larger sample (N = 70) in order to obtain a comparable match with the BD group on age and gender. Thirty-five (89.7%) of the control group and 20 (83.3%) of the BD group were European New Zealanders. Two (5.1%) of the control group and 3 (12.5%) of the BD group identified as Maori. The remaining participants were Other European. Thirty-eight (97.5%) of the control group and 22 (91.7%) of the BD group lived with a biological parent or relative (aunt, uncle, grandparent). One (2.6%) of the controls was adopted and two (8.3%) youth from the BD group were in foster care. None of the participants were in residential care. Twenty-four (61.5%) of the control group and 11 (45.8%) of the BD group lived with two parents, the remaining lived in single-parent homes. The clinical group was referred through a specialised service that assesses and treats youth with moderate to severe psychiatric disorders following initial queries of BD. The control group was recruited through advertising at local schools and community resources and received the same clinical evaluation as the clinical group (see below).

Diagnostic Protocol for BD, and other psychiatric disorders: Semi-structured interviews: Systematic information about current and lifetime disorders was obtained from both the child and the parent using the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL; Kaufman et al., 1997) in combination with the mood disorder supplement of the Washington University in St. Louis Kiddie Schedule for Affective Disorders and Schizophrenia (WASH-U-KSADS; Geller et al., 2001). As the WASH-U-KSADS has an extensive section on BD that addresses the limitations of applying the adult criteria to children, it was used in combination with the KSADS-PL, a methodology often used in paediatric research (NIMH, 2001). Further, due to the high overlap in symptoms between ADHD and BD, a diagnosis of BD included elation and/or grandiosity. As per the WASH-U-KSADS administration guidelines, informant discrepancies were addressed by taking positive endorsement of a symptom by either informant as presence of that symptom. The interview was also used to provide information on current and past suicidal behaviours and trauma. Rating scales: The Child Behaviour Checklist (CBCL; Achenbach, 1991) was administered as part of the overall diagnostic profiling. This instrument provides separate rating forms for parents, teachers and adolescents.

Inclusion criteria for BD group: The child met modified DSM-IV-TR criteria for BD (BD I or BD II) or BD-NOS as defined by the mood section of the WASHU-K-SADS parent and adolescent interview. A diagnosis of BD-NOS was usually assigned in cases where the symptoms of mania were present but the duration of the elated mood was less than four days or consisted of rapid cycling mood and chronic affective storms. Nine (37.5%) met criteria for BD I, six (25%) for BD II and nine (37.5%) BD-NOS. All BD cases showed onset of symptoms post-puberty.

Exclusion criteria for both groups: Children were excluded from analyses if they had an estimated IQ below 70 (one control) or above 130 (four controls), using the Block Design and

Vocabulary subtests of the Wechsler Adult Intelligence Scale-III (WAIS-III; Wechsler, 1997) or the Wechsler Intelligence Scale for Children-III (WISC-III, Wechsler, 1991), a combination of subtests commonly used to estimate full scale IQ. This excluded children who either would not understand the questionnaires or who had superior intellectual functioning that could skew the sample.

Measure of Demographic Variables

SES: The *New Zealand Socioeconomic Index of Occupational Status* (NZSEI; Davis et al., 1997) was used to establish an SES ranking for each of the participants based on parents' occupation. The NZSEI scores range between 10 and 90 (with higher scores indicating higher SES) and is based on 1991 New Zealand census data.

Dependent measures

Life events: The Life Events Checklist (LEC) developed by Johnson and McCutcheon (1980) for use with older children and adolescents was used to measure number of both positive and negative life events (46 in total) and how much those events impacted their life from 0 (no effect) to 3 (great effect).

Anger regulation: Given that paediatric BD presents more as affective storms and irritability, methods of coping with anger were explored. *The Novaco Anger Scale* (NAS; Novaco, 2003) was used as a comprehensive measure of anger. It is comprised of 60 statements and participants are asked to indicate from 1 ("never true") to 3 ("always true") the extent the statement is true for them (e.g., "when someone makes me angry, I think about ways of getting even."). Raw scores are converted to T-scores developed for adolescents 9-18. The scale consists of four domain scores (Cognitive, Arousal, Behavioural, and Regulation) as well as a total NAS score. The cognitive domain consists of questions tapping into anger justification, rumination, hostile attitude and suspicion. The arousal domain is subdivided into anger intensity, duration, somatic tension, and irritability. The behavioural domain is subdivided into impulsive reaction,

verbal aggression, physical confrontation, and indirect expression. The regulation domain consists of questions tapping into cognitive coping, arousal calming, and behavioural control. *Higher* scores on the cognitive, arousal and behavioural domains along with *lower* scores on the regulation domain indicate more problems with anger regulation.

Locus of control: the *Norwicki-Strickland Internal-External Control Scale* (Nowicki, 1973) was used to assess locus of control. This is a well validated instrument that contains 40 items that describe reinforcement situations across interpersonal and motivational areas such as affiliation, achievement and dependency (e.g., "do you believe you can stop yourself from catching a cold?") The higher the score, the more the individual externalizes locus of control.

Hopelessness: Hopelessness was measured using the *Hopelessness Scale for Children* (Kazdin et al., 1985), a scale that establishes how these adolescents perceive the future. It was adapted from the Beck Hopelessness Scale for Adults. The higher the score (ranging from 0 to 17), the more hopelessness the individual is reporting.

Self-esteem: The Rosenberg Self Esteem Scale (RSE, Rosenberg, 1979) was used as a measure of self-esteem, a 10 item, self report questionnaire where the individual indicates to what extent a statement (e.g., "I take a positive attitude toward myself") accurately reflects their self image. A higher score is indicative of a lower self-esteem.

Coping: The Adolescent Coping Scale (ACS: (Frydenberg and Lewis, 1993) consists of 80 statements and participants are asked to indicate from 1 (doesn't apply or don't do it) to 5 (used a great deal) the extent that they engage in that specific coping strategy. The general long form was administered. The items load onto 18 factors: seek social support, focus on solving the problem, work hard and achieve, worry, invest in close friends, seek to belong, wishful thinking, not coping, tension reduction, social action, ignore the problem, self-blame, keep to self, seek spiritual support, focus on the positive, seek professional help, seek relaxing diversions, and

physical recreation. The adjusted scores give an indication from 20 (not used at all) to 100 (used a great deal), the extent an individual engages in a specific coping strategy. Therefore, higher scores indicate that the individual is engaging more in that coping strategy during stressful situations and clinical interpretation of high scores depends on the nature of the specific coping strategy endorsed by the young person.

Procedures

The interviews were conducted with both the parent and adolescent separately in laboratories within a department of psychology in a midsized university by clinical psychologists who had established interrater reliability through training. Consent and assent forms were reviewed with both parents and adolescents. Questionnaire packages were sent to the adolescents' teachers with consent of the parents. All cases were reviewed with the primary investigator to achieve diagnostic consensus. The adolescent self-report measures were administered by clinical psychology graduate students blind to the diagnostic status of the child. Sixteen (66.6%) of the BD group and two of the controls were taking a psychotropic medication (e.g., methylphenidate, clonidine, fluoxetine, citalopram, quetiapine, lithium). All of the BD participants had achieved mood stability prior to testing.

<div align="center">Results</div>

Sample characteristics

There was no group difference in age (F (1, 61) = 1.605, *ns*), ethnicity (χ^2 (2, N = 63) = 1.116, *ns*), family constellation (i.e,, single versus intact families; χ^2 (1, N = 63) = 1.484, *ns*) and sex distribution (χ^2 (1, N = 63) = .881, *ns*). The mean age of the NC group was 15.41 (1.09) and 15.74 (1.58) for the BD group. There were group differences on SES (F (1, 61) = 5.443, *ns*), with the NC group having a higher SES than the BD group; and estimated IQ (F (1, 61) = 9.964, $p <$ .01) with the BD group having a lower IQ (99.04 (14.32)) than the NC group (108.95 (10.53)).

As expected, there were group differences on the CBCL scales between the normal controls and the clinical group (see Table 1). Table 2 illustrates the comorbid diagnoses across the two groups.

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Trauma

Based on the K-SADS interview, all participants were asked about current and past trauma. Four (10.3%) of the NC group and 13 (54.2%) of the BD group reported exposure to at least one traumatic event (χ^2 (1, $N = 63$) = 14.539, $p < .001$). Of these, 2 (5.1%) of the NC group and 2 (8.3%) of the BD group reported emotional abuse, 5 (20.8%) of the BD group reported physical abuse (χ^2 (1, $N = 63$) = 8.825, $p < .01$), 7 (29.2%) of the BD group reported sexual abuse (χ^2 (1, $N = 63$) = 8.825, $p < .001$), 1 (4.2%) of the BD group reported neglect, and 2 (5.1%) of the NC group with 4 (16.7%) of the BD group reported other traumatic events such as being in an accident, witnessing a murder, etc.

Due to documented relationships between family constellation and exposure to abuse, this data was also analyzed taking into consideration family constellation. Looking at the overall sample, there were *twice* as many (64.7% versus 35.3%) reporting a trauma who were from single parent homes (χ^2 (1, $N = 63$) = 3.871, $p < .05$); however, looking at the two groups separately, it was only in the control group where family constellation appeared to be a risk factor for abuse/trauma in that *all* four of those in the control group reporting a trauma were from single-parent homes (χ^2 (1, $N = 39$) = 7.131, $p < .01$) whereas there was an almost equal split in the BD group (χ^2 (1, $N = 24$) = .001, *ns*).

Suicidal/self-harm

Group differences were also found in reports of current and past suicidal ideation based

on responses to the K-SADS interview. Suicidal ideation was defined as either seriously

considered suicide or had made attempts to kill themselves. Two (5.1%) of the NC group and

seven (29.2%) of the BD group reported current suicidal ideation (χ^2 (1, $N = 63$) = 7.011, $p <$

.05), 3 (7.7%) of the NC group and 15 (62.5%) of the BD group reported past suicidal ideation

(χ^2 (1, $N = 63$) = 21.868, $p < .001$).

Psychosocial variables

Multivariate and univariate analyses of variance (MANOVA and ANOVA) were used to

examine group differences on the psychosocial variables. All the subscales of each measure were

entered in one test of MANOVA (e.g., all the coping subscales). Wilks' lambda was used as the

overall test of significance and if the overall omnibus F was significant ($p < .05$), the subsequent

univariate analyses were interpreted. Table 3 shows that group differences were found on the

majority of variables, with the BD group reporting *more* negative life events, *more* problems with

anger management (in terms of anger cognitions, angry behaviours and level of arousal reported),

greater hopelessness, *lower* self-esteem and a *more* external locus of control as compared with

the controls. Table 4 shows that the BD group reported that, in coping with difficult situations,

they are *more likely* to show an inability to deal with the problem, seek professional support, use

inadequate methods of reducing tension (such as screaming, taking alcohol/cigarettes, take

frustration out on others), and blame themselves for the problems as compared with the control

group. The BD adolescents reported being *less likely* to work hard and achieve, focus on solving

the problem, and focus on the positive side of circumstances than the controls.

All analyses on the psychosocial variables were rerun covarying for IQ, SES and

comorbid conditions (coded as a continuous variable with more comorbid conditions increasing

the score) and the pattern of results remained the same. Large effect sizes, using cohen's *d*,

confirm the importance of the group differences found.

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Insert Tables 3 and 4 here

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Exploratory analyses within the BD group

Although sample size was a limiting factor for exploratory analyses, it was possible to derive some clinically meaningful data from further comparisons. There were no group differences on the psychosocial variables between those BD adolescents with and without a history of trauma. However, as expected, group differences were found when comparing those adolescents reporting current suicidal ideation versus those reporting none within the BD group. The suicidal adolescents were found to be more hopeless (F (1, 21) = 15.330, p < .001), had a more external locus of control (F (1, 21) = 10.013, p < .01), had lower self-esteem (F (1, 21) = 5.963, p < .05), and reported more problems regulating anger (F (1, 21) = 5.056, p < .05). Indeed, based on discriminant function analyses, hopelessness on its own, correctly classified 87.5% of the BD sample as either suicidal (71.4%) or not suicidal (94.1%). There were no group differences on any of the variables between BD I and II (n = 15) combined versus BD-NOS (n = 9). Correlation analyses revealed that the more negative life events reported, the more external the locus of control (r = .453, p <.05) and the more prone they were to give responses indicative of acting out when angry (r = .474, p <.05).

Discussion

Research on psychosocial variables and BD has been limited not only to adults but also to variables external to individuals, such as social support, relationships and stressors. This study investigated the more intra-individual psychosocial variables such as self-esteem, coping and affect regulation, particularly anger. Similar to other studies, this study showed that BD adolescents are reporting more negative life events as well as more trauma in the past as

compared with the control group. This study then determined that adolescents with BD are at higher risk for lower self-esteem, a greater sense of hopelessness, a more external locus of control, more maladaptive coping strategies, and more difficulty regulating anger as compared with a community control sample. In turn, they reported more suicidal ideation and attempts as compared with the controls. Effect sizes indicated that the group differences were large and clinically important. Further, presence of comorbid conditions and histories of trauma could not account for the group differences found; suggesting that poor psychosocial functioning should be expected when assessing and treating adolescents with BD. Further, while family constellation (single versus intact homes) was related to presence of trauma in the control group, this relationship did not exist in the BD group. As expected, those adolescents reporting suicidal ideation were also reporting more maladaptive cognitions. This documentation of a broad range of psychosocial problems at such a young age has a variety of implications.

For a long time, the belief was held that BD was largely a biological disorder that was best treated with pharmacotherapy. However, more recently, the AACAP practice parameters recommend that in the treatment of children and adolescents with BD, a comprehensive multimodal treatment should be implemented, one that combines both psychopharmacology and psychosocial therapies (AACAP, 1997). Further, a recent review suggested that schema-focused cognitive therapy could be applied to adults with BD (Ball et al., 2003). The question that remains is whether similar approaches should be investigated for the younger populations. This current study indicates that there may be a number of avenues for implementing psychosocial treatments in an adolescent population through identification of maladaptive cognitions. To date, there have not been any studies investigating the efficacy of psychosocial interventions for paediatric BD.

Our understanding of risk factors for suicide and suicide attempts continues to be in its

infancy. However, given that adults with BD are at increased risk for suicidal behaviours (Goodwin and Jamison, 1990) and that those individuals who do have a history of suicide attempts have higher interpersonal problems than those without attempts (Tsai et al., 1999), these findings of greater hopelessness, poorer coping skills and higher reports of anger management problems in the BD group, suggest some ways for intervening with these young people. The importance of targeting psychosocial variables in suicide prevention has been documented (Gray and Otto, 2001); this study has identified some important variables to consider in such interventions. As cognitive-behaviour therapy has been shown to be effective in assisting individuals with a variety of cognitive vulnerabilities including anger management problems, this study suggests that it may be important to address these issues in BD adolescents.

This study, similar to others, has documented that individuals with BD face more negative life events than those without BD. Further, there was a greater likelihood of past reports of trauma as compared with the controls, a finding also documented in other BD populations (Post et al., 2001; Marchand et al., 2005). Interestingly, there was an equal reporting of traumatic events across family constellation (single versus intact homes) within the BD group suggesting that BD youth are at risk for abuse, regardless of the specific constellation in which they are reared. What cannot be determined from the data is the extent to which the overall family environment played a role in the onset of BD symptoms as well as influencing the risk of exposure to traumatic events. Future research could investigate in greater detail the exact nature of these environments.

This current report also suggests that these individuals have poorer coping resources than individuals without BD, increasing the likelihood that they will have more trouble adjusting to stressors as they arise. Given that it has been documented in older samples that life events can play an important role in timing and recovery from episodes of BD (Johnson and Miller, 1997),

this study challenges clinicians to determine ways of reducing future life stressors for these youngsters in order to minimize the impact these events can have on prognosis. Further, knowing that stressors and trauma could impact on treatment adherence and compliance (Kulhara et al., 1999) as well as underlying biological processes such as sleep and eating patterns, recognizing the role that these events play in outcomes is crucial. What cannot be determined from this study is the timing of abuse and onset of mental illness. Given the retrospective nature of the reports, it cannot be determined whether trauma influenced the onset of symptoms or whether the presence of mental illness increased the likelihood of abuse. Future research could investigate more closely the link between negative events and onset of BD.

Finally, a recent study documented higher anger attacks (physical, psychological or behavioural) in adults with BD during depressive episodes (Perlis et al., 2004). These anger attacks may place them at greater risk for suicidal behaviours. This current study explored at a more cognitive level, the thoughts related to angry outbursts and behaviours, identifying possible cognitive correlates underlying the higher anger attacks in the BD population. In particular, BD adolescents were more likely to appraise a situation as provocative, ruminate about threat or mistreatment by others, experience physiological activation in provoking situations, and report impulsive reactions, verbal aggression, and physical confrontation in situations provoking anger. Finally, they were less likely to report adaptive ways of regulating anger such as calming, and behavioural control. These responses may also begin to explain why irritability and affective storms are so common in paediatric BD. While a biological explanation for these behaviours cannot be ruled out, these data suggest that some of the affective dysregulation may be fuelled by faulty and maladaptive cognitions, suggesting alternative ways of managing mood irregularities.

Limitations

All of the young people with BD were assessed once mood had been stabilized with

medications. Given that state of mood affects psychosocial functioning, this study was unable to determine whether the participants would have responded similarly in a different mood state. Further research is required to address individual variability in psychosocial presentations across time and fluctuations in mood.

There was no psychiatric comparison group to determine whether the issues faced by those adolescents with BD were specific to BD, particularly given the high number of comorbid disorders in this group. However, given that the goal of the study was to begin the documentation of what psychosocial problems are present in a BD group, regardless of comorbid status, a psychiatric control group was deliberately not included. Further, this sample is representative of a population of BD adolescents consecutively referred to a tertiary health care centre. Future research could address whether there are unique psychosocial profiles for paediatric BD. Along the same lines, the control group was likely a high functioning group given the higher than normal IQs and the low number of psychiatric problems in the group. While no-one was excluded for having a psychiatric problem, it is possible that those with difficulties were less likely to volunteer to participate. In addition, given that the recruiting for the control group was mainly done through schools and community resources, this form of recruitment would bias the sample towards higher achievers as well as higher functioning individuals.

The small sample size limited the number of analyses that could be performed, including regressions that may enlighten which psychosocial variables have greater impact on severity of illness. Future research could also investigate differences among subgroups, such as those with the classic manic symptoms and those with the more chronic affective storms. While the lack of group differences between these two subgroups found in this study provides some evidence for the validity of BD-NOS, studies with larger samples need to be conducted to confirm these findings. Gender comparisons are also needed to elucidate whether BD females face similar

psychological risks as BD males.

Finally, self-report questionnaires are limited in that they may not truly represent the way an individual would behave in a real situation. It is also opens up the possibility of reporter bias with some youth either under-reporting or over-reporting their problems. Further research into the reliability of self-report is always required.

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Table 1

Sample characteristics

	NC (n = 39)		BD (n = 24)		F ratio
	Mean	SD	Mean	SD	
GAF	84.44	10.417	54.46	9.086	135.209***
CBCL-parent					
Total	45.29	10.924	71.54	12.776	71.622***
Internalizing	45.11	10.665	66.88	14.868	42.926***
Externalizing	46.94	10.611	67.67	15.113	38.379***
YSR-youth					
Total	44.20	9.719	61.88	15.107	26.063***
Internalizing	43.29	9.624	56.24	17.221	12.153***
Externalizing	47.29	9.183	65.18	14.328	29.768***
TRF-teacher (13 per group)					
Total	45.23	6.882	64.69	9.810	34.291***
Internalizing	43.15	6.756	58.92	5.852	40.467***
Externalizing	45.15	14.076	63.77	10.561	14.548***

Note: *$p < .05$, ** $p < .01$, *** $p < .001$, GAF = Global Assessment of Functioning, CBCL = Child Behavior Checklist, YSR = Youth Self Report, TRF, Teacher Report Form

Table 2

Comorbid Diagnoses by Group

Comorbid Diagnosis: n (%)	NC (n=39)	BD (n=24)
ADHD Inattentive**	0	5 (20.8)
ADHD Hyperactive/Impulsive	0	1 (4.2)
ADHD Combined**	0	6 (25)
ODD current***	0	11 (45.8)
ODD past***	0	11 (45.8)
CD current*	1 (2.6)	6 (25)
CD past**	0	5 (20.8)
MDD current*	2 (5.1)	6 (25)
MDD past***	1 (2.6)	15 (62.5)
SAD current	0	1 (4.2)
SAD past*	2 (5.1)	6 (25)
GAD current	0	0
GAD past	0	2 (8.3)
OCD current	0	0
OCD past	1 (2.6)	1 (4.2)
Social Phobia current*	1 (2.6)	5 (20.8%)
Social Phobia past*	2 (5.1)	6 (25)
PTSD current*	0	4 (16.7)
PTSD past**	0	5 (20.8)

Note: χ^2 analyses: *$p < .05$, ** $p < .01$, *** $p < .001$, ODD = Oppositional Defiant Disorder, CD = Conduct Disorder, MDD = Major Depressive Disorder, SAD = Separation Anxiety Disorder, GAD = Generalized Anxiety Disorder, OCD = Obsessive Compulsive Disorder, PTSD = Post-Traumatic Stress Disorder

Table 3

Psychosocial functioning by group

	NC (n = 39)		BD (n = 24)		F ratio	Effect size
	Mean	*SD*	*Mean*	*SD*	*(1, 61)*	*(cohen's d)*
Number of positive life events	2.85	2.3	3.08	2.43	.151	.10
Number of negative life events	2.59	2.66	5.25	3.80	10.655**	.81
Impact of positive life events	4.69	4.65	4.71	4.84	.000	0
Impact of negative life events	3.82	4.19	9.92	8.50	14.483***	.91
Anger (T scores)						
Cognitive	56.85	6.89	63.35	9.92	9.252**	.76
Arousal	50.97	7.04	62.09	11.49	22.394***	1.17
Behavioural	52.62	5.16	64.09	10.08	35.181***	1.43
Regulation†	52.28	9.60	43.26	10.27	12.142***	.91
Total	53.69	6.47	64.17	9.88	25.516***	1.25
Hopelessness	3.05	2.224	6.04	4.369	12.929***	.86
Self-esteem	7.31	4.572	12.42	6.909	12.502***	.87
Locus of control	10.62	4.739	16.33	5.806	18.195***	1.08

*p < .05, **p < .01, ***p < .001, † a lower score indicates more problems with anger regulation, for all other scales, the higher the score the more psychosocial difficulties being reported.

Table 4

Coping styles by group

	NC (n = 39)		BD (n = 24)		F ratio	Effect sizes
	Mean	SD	Mean	SD	(1, 61)	(cohen's d)
Social support	61.44	20.82	51.67	18.72	3.527	.49
Problem solving	65.31	17.35	53.67	19.16	6.177*	.64
Work hard	69.33	13.40	48.17	18.25	28.022***	1.32
Worry	42.46	16.74	50.5	27.25	2.112	.36
Invest in close friends	57.03	15.43	54.5	24.08	.258	.13
Seek to belong	54.87	18.05	52.17	19.65	.312	.14
Wishful thinking	50.26	18.67	46.92	18.01	.488	.18
Not coping	35.90	12.26	49.33	17.44	12.873***	.89
Tension reduction	35.38	11.88	51.83	20.58	16.234***	.98
Social actions	30.64	12.31	32.5	16.42	.262	.13
Ignore problems	42.9	15.41	47	18.65	.896	.24
Self blame	41.54	17.36	52.5	22.31	4.754*	.55
Keep to self	49.10	17.77	54.38	23.79	1.007	.25
Seek spiritual support	33.46	21.59	29.79	20.03	.453	.18
Focus on positive	62.69	17.62	48.33	19.49	9.104**	.77
Seek professional help	31.92	14.03	48.12	24.84	10.978**	.80
Seek relaxing diversions	78.97	13.90	70.00	23.26	3.688	.47
Engage in physical recreation	64.44	18.18	46.38	20.73	13.173***	.93

*p < .05, **p < .01, ***p < .001. Higher scores indicate engaging *more* in the specific coping strategy identified