Journal of Psychiatric Research 158 (2023) 226–230

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/jpsychires

The association between childhood bullying victimisation and childhood maltreatment with the clinical expression of bipolar disorder

Athina Manoli [a], Lucy C. Wright [a], Sania Shakoor [a], Helen L. Fisher [b,c], Georgina M. Hosang [a,*]

[a] Centre for Psychiatry & Mental Health, Wolfson Institute of Population Health, Barts & The London Faculty of Medicine & Dentistry, Queen Mary University of London, UK
[b] Social, Genetic and Developmental Psychiatry Centre, Institute of Psychiatry, Psychology & Neuroscience, King's College London, UK
[c] ESRC Centre for Society and Mental Health, King's College London, UK

ARTICLE INFO

Keywords:
Childhood adversity
Child abuse
Child neglect
Bipolar disorder
Suicide
Psychosis
Bullying

ABSTRACT

Adverse childhood experiences are significantly associated with a worse clinical expression of bipolar disorder, however, the literature has mainly focused on childhood maltreatment (abuse and neglect) with little attention paid to other forms of adversity, such as childhood bullying victimisation (referred to here as bullying), although this is known to have a negative impact on different psychiatric illnesses. The current study aimed to investigate the association between bullying victimisation and the clinical expression of bipolar disorder individually and in combination with childhood maltreatment. This investigation consisted of 63 individuals with a diagnosis of bipolar disorder (mean age 61.4 years) who completed the Retrospective Bullying Questionnaire and the Childhood Trauma Questionnaire to measure exposure to bullying and childhood maltreatment, respectively. The clinical expression variables were assessed using self-report instruments, these were: the Cardiff Anomalous Perceptions Scale (psychotic symptoms), Suicide Behaviours Questionnaire, Self-Report Manic Inventory, Beck Anxiety and Depression Inventories. The results showed that exposure to bullying was significantly associated with more suicidal behaviours ($F(1,61) = 11.02$, $p < .01$, $\eta^2 = 0.15$) and psychotic symptoms ($F(1,61) = 4.21$, $p < .05$, $\eta^2 = .06$). When bullying and childhood maltreatment histories were combined, the results showed that individuals with a history of both adversity types reported significantly more suicidal behaviours ($F(2,60) = 6.59$, $p < .01$, R^2=.18) compared to those with a history of one or neither form of adversity. The sample size, age and gender distribution, limit the generalisability of the findings. However, the current results underscore the need to account for bullying victimisation when considering the adverse childhood experiences-bipolar disorder relationship, especially its clinical expression.

1. Introduction

Bipolar disorder [BD] is a life-long psychiatric illness characterised by extreme fluctuations in mood from depression to mania (American Psychiatric Association, 2013). BD affects up to 2% of the population (Merikangas et al., 2011) and is associated with considerable morbidity and premature mortality (Crump et al., 2013). The clinical expression of BD varies greatly and includes comorbid symptoms, disorders, or behaviours that increase impairment and treatment need. In BD, for instance, psychosis is present in up to 75% of manic episodes (Goodwin and Jamison, 2007). Moreover, BD has one of the highest rates of suicide attempts (up to 60%) and death by suicide (up to 19%) of all psychiatric illnesses (Dome et al., 2019). It is clear that a worse clinical expression of BD is associated with substantial costs to the individual and wider society through a significant reduction in quality of life and increased utilisation of health services (Michalak et al., 2006; Simon et al., 2021). Elucidation of factors that influence the BD clinical expression is of great clinical importance to devise effective interventions.

A wealth of evidence demonstrates a significant link between adverse childhood experiences [ACEs] and the clinical expression of BD in adulthood (Agnew-Blais and Danese, 2016). ACEs is a broad construct that encompasses various stressful and traumatic experiences that occur early in life, including abuse and neglect (collectively referred to as childhood maltreatment) and bullying victimisation (Felitti et al.,

* Corresponding author. Centre for Psychiatry & Mental Health, Wolfson Institute of Population Health, Faculty of Medicine and Dentistry, Queen Mary University of London, Yvonne Carter Building, 58 Turner Street, London, E1 2AB, UK.
E-mail address: g.hosang@qmul.ac.uk (G.M. Hosang).

https://doi.org/10.1016/j.jpsychires.2022.12.039
Received 24 June 2022; Received in revised form 7 November 2022; Accepted 21 December 2022
Available online 22 December 2022

1998). In the BD literature childhood maltreatment has received much research attention, the results of which were synthesised in a meta-analysis showing greater psychosis severity, higher risk of co-morbid anxiety disorder, and suicide attempts among individuals with BD and a history of childhood maltreatment (Agnew-Blais and Danese, 2016). Although the research concerning childhood maltreatment and the clinical expression of BD is burgeoning, little is known about other ACEs (e.g., bullying victimisation).

Childhood bullying victimisation (referred to here as bullying victimisation) is characterised by repeated hurtful actions from peers during childhood and adolescence where a power imbalance exists and can include direct (e.g., physical assaults) and indirect (e.g., social exclusion) forms (Olweus et al., 1999). Bullying victimisation is a robust predictor of adult mental illness (Lereya et al., 2015; Takizawa et al., 2014). Little is known about the impact of bullying victimisation on BD clinical expression. Initial research indicates that bullying victimisation was associated with psychosis and suicidal behaviour but among children with BD (Acosta et al., 2020). More research is needed to address the knowledge gap surrounding the bullying victimisation-BD clinical expression relationship especially in adults, which will be addressed in the current study.

There is increasing recognition that ACEs are highly correlated; in BD up to 25% of people report experiencing two or more forms (Hosang et al., 2018). Several studies have shown that individuals with BD exposed to multiple ACEs have higher odds of developing psychosis and medical comorbidity (Upthegrove et al., 2015; Hosang et al., 2018). In most cases, however, bullying victimisation has not been considered and the focus is on childhood maltreatment. Research is needed to examine the individual and combined impact of bullying victimisation and childhood maltreatment on the clinical expression of BD. The results of such work would help determine whether there are specific ACEs which are most pertinent to the BD clinical expression or whether it is more important to consider multiple ACEs.

To our knowledge this is the first study to examine the individual and combined impact of bullying victimisation and childhood maltreatment on clinical expression in adult BD, exploring whether childhood maltreatment and bullying victimisation act in an additive manner to impact the BD clinical expression.

2. Methods

2.1. Participants

The sample consisted of 65 individuals (65% females), with a mean age of 61.4 ($SD = 9.78$) and a confirmed BD diagnosis according to the Schedule for Clinical Assessment in Neuropsychiatry interview (Wing et al., 1990). Individuals included in the current study participated in the 10-year follow-up (2018–2019) of the Bipolar Affective Disorder Gene-Environment interplay [BADGE] study (2007–2010) (Hosang et al., 2012). Participants were enrolled by re-contacting adults with BD that took part in the Bipolar affective disorder Case-Control study [BaCCs] (Gaysina et al., 2009; Hosang et al., 2017). Participant recruitment for BaCCs was through psychiatric outpatient clinics, media advertisement and self-help groups in the UK. The studies were conducted in accordance with the latest version of the Declaration of Helsinki and all participants provided informed consent. Ethical approvals were obtained from the King's College Hospital Ethics Committee (06/Q0703/250) for the BADGE study and Queen Mary, University of London Ethics of Research Committee (QMERC2018/21) for the 10-year follow-up.

2.2. Measures

Childhood maltreatment was measured using the 28-item self-report Childhood Trauma Questionnaire [CTQ] (Bernstein et al., 2003), with each item rated on a 5-point Likert scale from 'never true' to 'very often true'. The questionnaire distinguishes five types of maltreatment: emotional, physical and sexual abuse, as well as emotional and physical neglect. Individuals who reported moderate-severe levels of any type of maltreatment according to the CTQ manual cut-offs (Bernstein et al., 2003) were considered as 'maltreated' and below these cut-offs as 'not-maltreated'. Good convergent validity and test-retest reliability over 10 years has been found for the CTQ in this sample (Hosang et al., under review).

Childhood bullying victimisation was measured using the Retrospective Bullying Questionnaire (Schäfer et al., 2004), which assesses physical, verbal and indirect bullying experiences between ages 4–16 years. Those who reported being bullied in one or more ways "sometimes" or more often (frequency) and classified the experience as quite or extremely serious (intensity) were considered 'victims' in the current study. Good criterion validity (Noorazar et al., 2021) and test-retest reliability (Schäfer et al., 2004) have been reported for this instrument in adult samples.

Anxiety symptoms over the past month were assessed using the self-report Beck Anxiety Inventory (Beck et al., 1988). This scale is comprised of 21 statements that participants rated on 4-point Likert scale, ranging from 'not at all' to 'severely'. These were summed to create a total anxiety symptoms score.

Depressive symptoms were measured using Beck Depression Inventory-II (Beck et al., 1996), which consists of 21 groups of 4 statements, each representing varying degrees of severity. Participants endorsed which statement most represented how they were feeling in the past 2 weeks. These were summed to create a total depressive symptoms score.

Manic symptoms in the past week were measured using the 45-item Self-Report Manic Inventory (Shugar et al., 1992). Yes/No responses were required for each item, which were summed to create a total manic symptoms score.

The 32-item Cardiff Anomalous Perceptions Scale (Bell et al., 2006) was used to assess psychotic symptoms both in terms of perceptual and sensational experiences. Each question required a yes/no response. A 'yes' response led participants to rate the degree of distress, intrusiveness, and frequency of occurrence on a 5-point Likert scale.

Four suicidality constructs were assessed using the self-report Suicide Behaviours Questionnaire (Osman et al., 2001), these were lifetime ideation and attempt, recent frequency of ideation, suicide threats, and the self-assessed likelihood of future suicidal behaviour. Each construct was rated using multiple choice responses (3–6 responses) which were summed to produce an overall suicidal behaviour score.

2.3. Statistical analyses

We examined group differences in bullying victimisation (victim vs non-victim) and sex using chi-squared tests. A logistic regression was conducted to examine the association between bullying victimisation and childhood maltreatment controlling for sex. The effects of bullying victimisation on the BD clinical expression were examined using a MANOVA. For this analysis, bullying victimisation (victim vs non-victim) was used as an independent variable, the outcome variables were the clinical expression dimensions of BD (i.e., suicidal behaviours, anxiety, depressive, manic, and psychotic symptoms). This test was repeated controlling for the effects of childhood maltreatment using a MANCOVA. Sex and age were found to have no confounding effects and therefore were not included in the analyses. Post-hoc ANOVAs were conducted to determine the direction of differences.

A series of linear regression models were used to explore the additive effect of bullying victimisation and childhood maltreatment on BD clinical expression. Childhood adversity (combined bullying victimisation and childhood maltreatment) was used as the predictor variable with three levels (neither, either or both forms of adversity); the dependent variables were the clinical expression dimensions. The confounding effects of sex and age were examined. Only sex was found to be

pertinent to childhood adversity and suicidal behaviours and was included as a covariate in this linear regression model. Given the restricted sample size, analyses were conducted with non-parametric bootstrap with replacement (2000 replications) and performed using R Statistical Software (v3.6.3; R Core Team 2020).

3. Results

Two participants were excluded due to missing data. The final sample consisted of 63 participants (63.5% females). A total of 22 (34.9%) participants reported experiencing bullying victimisation at any age, 3 (4.7%) at primary school only (ages 4–11), 12 (19.1%) secondary school only (ages 11–16) and 7 (11.1%) at both time points. Due to the limited sample size, bullying victimisation was treated as a dichotomous variable in the remainder of the investigation, the sample was divided into 2 groups: those with (victims) and without (non-victims) a history bullying victimisation at primary or secondary school.

No sex differences were found in the reporting of bullying victimisation ($\chi^2(63) = 0.32$, $p > .05$), but a significantly higher proportion of males reported a history of childhood maltreatment compared to females ($\chi^2(63) = 4.94$, $p < .05$). BD cases categorised as victims of bullying had a significantly higher odds of experiencing childhood maltreatment compared to non-victims (OR = 8.84, BCa 95% CI 2.34–37.26, $p < .01$).

3.1. Is childhood bullying vicitimisation associated with the clinical expression in bipolar disorder?

Bullying victimsation was found to be associated with a worse clinical expression (combined) of BD (i.e., suicidality, depressive, manic, anxiety and psychotic symptoms) ($F(5,57) = 2.86$, $p < .05$, $\eta 2 = 0.20$). Separate post-hoc ANOVA tests for each clinical expression dimension revealed that individuals who were victims of bullying experienced a higher number of suicidal behaviours ($F(1,61) = 11.02$, $p < .01$, $\eta^2 = 0.15$) and more psychotic symptoms in adulthood ($F(1,61) = 4.21$, $p < .05$, $\eta^2 = 0.06$) compared to non-victims; no other significant differences were detected (Table 1). When analyses were repeated including childhood maltreatment as a covariate the results only remained significant for suicidal behaviours ($F(1,60) = 7.40$, $p < .01$, $\eta^2 = 0.11$) not psychotic symptoms ($F(1,60) = 3.04$, $p = .09$, $\eta^2 = 0.05$) (Table 1).

3.1. Is there an additive effect of childhood bullying victimisation and maltreatment on the clinical expression of BD?

Evidence of an additive relationship between childhood adversity (bullying victimisation and maltreatment combined) and BD clinical expression was found (Table 2). Individuals with a history of both bullying victimisation and maltreatment (n = 18, 29%) had significantly more suicidal behaviours ($F(2,60) = 6.59$, $p < .01$, R^2=.18), compared to those with a history either (bullying victimisation or maltreatment) (n = 21, 33%) or neither (n = 24, 38%) forms of adversity (Fig. 1). A similar pattern was found for psychotic symptoms but only with nominally significance ($F(2,60) = 2.56$, $p = .08$, R^2=.08).

4. Discussion

This is the first study to our knowledge to explore the role of bullying victimisation in the clinical expression of BD in adulthood. In a well-characterised sample of adults with BD, we found that victims of bullying had significantly more suicidal behaviours and psychotic symptoms in adulthood compared to non-victims. We also found that individuals with a history of both childhood bullying victimisation and maltreatment had significantly more suicidal behaviours compared to those with a history either or neither adversity types.

This investigation provides a novel contribution by specifically examining the association between bullying victimisation and the BD clinical expression. Our results are congruent with studies focused on paediatric BD, which find a significant association between bullying victimisation, psychosis and suicidal behaviours (Acosta et al., 2020). We extend these results to adult BD, highlighting the importance of accounting for bullying victimisation when considering predictors of the clinical expression of this illness.

Our other novel result is that individuals with a history of both bullying victimisation and childhood maltreatment report significantly

Table 1
Childhood bullying victimisation and clinical expression of bipolar disorder.

		Childhood bullying victimization (*N*=63)		Chi-square (χ^2)	*p*-value		
	Full sample (*n* = 63)	Victims (*n* = 22)	Non-Victim (*n* =41)				
Gender	Male	7 (11.11%)	16 (25.40%)	.32	.61		
	Female	15 (23.81%)	25 (39.68%)				
						Childhood maltreatment included as covariate	
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	***F-statistic***	***p*-value**	***F-statistic***	***p*-value**
Age	61.7 (9.70)	62.59 (9.55)	61. 22 (9.86)				
Suicide behaviours	6.86 (4.99)	9.50 (5.01)	5.44 (4.42)	11.01	**.001****	7.40	**.009****
Anxiety symptoms	36.94 (13.72)	39.91 (14.23)	35.34 (13.35)	1.60	.21	1.27	.26
Depressive symptoms	12.38 (9.63)	13.05 (9.42)	12.02 (9.84)	.16	.69	.08	.78
Manic symptoms	7.22 (12.09)	9.45 (9.11)	7.22 (12.09)	.57	.45	.73	.40
Psychotic symptoms	2.43 (5.09)	4.18 (7.54)	1.49 (2.78)	4.22	**.04***	3.04	.09

Abbreviations: SD, standard deviation.
*p < .05. **p < .001.

Table 2
Association of combined childhood bullying victimisation and maltreatment on the clinical expression of BD.

	Predictor Childhood Adversity	*b*	*b* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	Fit
Suicidal behaviours	(Intercept)	10.17**	[7.83, 12.41]			
	Either	−4.40**	[-7.18, −1.63]	.12	[.02, .27]	R^2 = .180**
	Neither	−4.83**	[-7.71, −1.67]	.16	[.02, .37]	95% CI[.04,.41]
Anxiety symptoms	(Intercept)	39.44**	[32.90, 47.00]			
	Either	−2.25	[-10.75, 6.09]	.00	[.00, .09]	R^2 = .019
	Neither	−4.61	[-13.42, 4.67]	.02	[.00, .16]	95% CI[.00,.18]
Depressive symptoms	(Intercept)	12.78**	[8.50, 17.40]			
	Either	0.27	[-5.05, 5.42]	.00	[.00, .06]	R^2 = .005
	Neither	−1.28	[-7.67, 5.15]	.00	[.00, .13]	95% CI[.00,.15]
Manic symptoms	(Intercept)	8.83**	[4.69, 13.83]			
	Either	−0.93	[-6.70, 4.27]	.00	[.00, .07]	R^2 = .003
	Neither	−1.37	[-8.50, 7.00]	.00	[.00, .15]	95% CI[.00,.18]
Psychotic symptoms	(Intercept)	4.67**	[1.53, 8.95]			
	Either	−3.19	[-7.55, 0.32]	.06	[.00, .19]	R^2 = .079
	Neither	−3.08	[-7.52, 0.38]	.06	[.00, .19]	95% CI[.00,.24]

Note. For the predictor childhood adversity 'Both' (childhood maltreatment and bully victimisation) was set as the baseline reference. A significant b-weight indicates the semi-partial correlation is also significant. b represents unstandardized regression weights. sr^2 represents the semi-partial correlation squared. LL and UL indicate the lower and upper limits of a confidence interval, respectively.*p < .05. **p < .01.

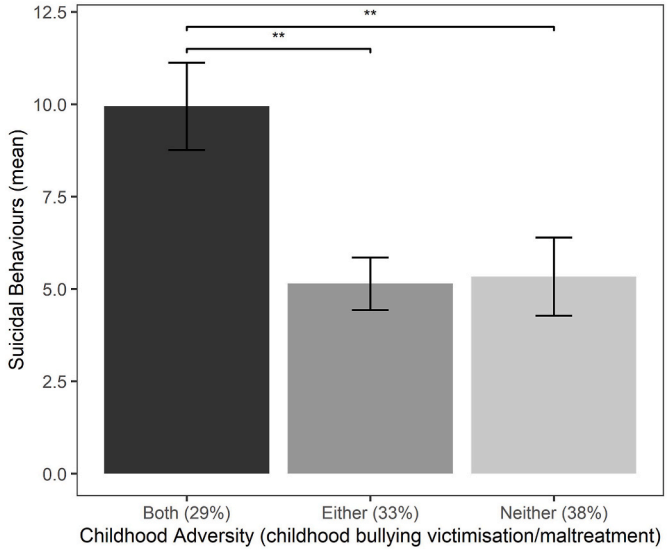

Fig. 1. Mean suicidal behaviours by cumulative experiences of childhood bullying victimisation and maltreatment. Note: error bars represent standard errors. *p < .05. **p < .01.

more suicidality relative to those with a history of either or neither adversity types. Although previous studies on BD clinical course find similar patterns, they have not included bullying victimisation (Hosang et al., 2018; Park et al., 2020). Clearly, future BD studies should account for bullying victimisation when considering the impact of ACEs and not just focus on childhood maltreatment.

The results of the current investigation are consistent with those studies using non-clinical community samples which report a significant prospective association between bullying victimisation and suicidality in adulthood (Geoffroy et al., 2022). But the experience of other ACEs did not impact these results (Geoffroy et al., 2022), suggesting that our findings maybe BD specific and not generalisable to other populations.

Our results have important research and clinical implications by expanding understanding of the childhood factors (bullying victimisation) relevant to the clinical expression of BD. This should spur future research into replicating these findings and determining mechanisms which underpin this relationship, since they may reveal intervention targets. Assessing bullying victimisation history could help identify those who may benefit most from such interventions to improve clinical outcomes for people with BD. Our findings contribute to the literature showing the long-term deleterious consequences of bullying victimisation on severe mental illnesses, underscoring the importance of preventing the occurrence of such adversity.

There are some methodological limitations that should be considered when interpreting our findings. Firstly, the study relied on retrospective reporting of childhood adversity, which is associated with several biases that could result in data inaccuracies. However, this study used validated questionnaires that have very good convergent validity and 10-year test-retest reliability in this BD sample (Hosang et al., under review). Furthermore, it has been suggested that recall bias accounts for very little variance in retrospective abuse recall (Fergusson et al., 2011).

The second limitation is that a restricted sample size was used here, which may have impacted the results and precluded examination of timing (childhood or adolescence), chronicity, different forms/categories of bullying victimisation or childhood maltreatment. These should be the focus of future replication studies.

Thirdly, it is possible that there are other variables/mediators (e.g., emotion regulation) that may influence the relationship between childhood adversity, psychotic symptoms and suicidal behaviours in BD which are not accounted for in this investigation, especially given the large gap between the exposure and current symptomatology. Future studies should examine these mediators.

Finally, our sample is largely comprised of females (65%) and are middle-aged (mean 61.4 years) which means our results are not generalisable beyond this demographic and should be replicated using a more representative sample. The strengths of this investigation should also be noted which include the use of a well-characterised BD sample and psychometrically robust instruments to assess childhood adversity.

To our knowledge, this is the first study to investigate the association between childhood bullying victimisation and the clinical expression of BD, showing that those with BD who have a history of bullying victimisation have significantly more suicidality and psychotic symptoms relative to those who were not bullied. We also found that those exposed to both childhood bullying victimisation and maltreatment reported significantly more suicidality compared to those who report one or

neither type of childhood adversity. These results underscore the value of examining a range of ACEs outside of just childhood maltreatment in relation to BD.

Funding sources

The set-up of the BADGE study was supported by an Interdisciplinary PhD studentship from the UK Economic Social Research Council (ESRC) and Medical Research Council to Georgina Hosang. The follow-up study was funded by a grant from the International Bipolar Foundation to Georgina Hosang. Helen L. Fisher is supported by the ESRC Centre for Society and Mental Health at King's College London [ES/S012567/1]. The funding sources were not involved in the study design, data collection, analyses, drafting and submission of the manuscript for publication.

Author statements

Athina Manoli conducted the analyses and she contributed to drafting the manuscript. Lucy Wright contributed to drafting the manuscript. Sania Shakoor advised on the statistical analyses of the study and contributed to the final manuscript. Helen Fisher contributed to the conceptualisation of the project and advised on the analyses and write up of the manuscript. Georgina Hosang was responsible for securing funding and management of data collection for both the baseline and follow-up studies. She led the conceptualisation of the study and advised on the analyses. She supervised and contributed to the draft and finalisation of the manuscript.

Declaration of competing interest

Dr Sania Shakoor is a trustee for Kidscape. The other authors have nothing to declare.

Acknowledgements

We would like to express our gratitude to all of the individuals who participated in the research studies as well as the Radiant Team and Elizabeth Appiah-Kusi who were involved in collecting the data and managing the studies.

References

Acosta, J.R., Librenza-Garcia, D., Watts, D., Francisco, A.P., Zórtea, F., Raffa, B., Kohmann, A., Mugnol, F.E., Motta, G.L., Tramontina, S., Passos, I.C., 2020. Bullying and psychotic symptoms in youth with bipolar disorder. J. Affect. Disord. 265, 603–610. https://doi.org/10.1016/j.jad.2019.11.101.

Agnew-Blais, J., Danese, A., 2016. Childhood maltreatment and unfavourable clinical outcomes in bipolar disorder: a systematic review and meta-analysis. Lancet Psychiatr. 3 (4), 342–349. https://doi.org/10.1016/S2215-0366(15)00544-1.

American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders: DSM-5, fifth ed. American Psychiatric Association, Washington, DC.

Beck, A.T., Epstein, N., Brown, G., Steer, R.A., 1988. An inventory for measuring clinical anxiety: psychometric properties. J. Consult. Clin. Psychol. 56 (6), 893. https://doi.org/10.1037/0022-006X.56.6.893.

Beck, A.T., Steer, R.A., Brown, G.K., 1996. Beck Depression Inventory (BDI-II). Pearson, London, UK.

Bell, V., Halligan, P.W., Ellis, H.D., 2006. The Cardiff Anomalous Perceptions Scale (CAPS): a new validated measure of anomalous perceptual experience. Schizophr. Bull. 32 (2), 366–377. https://doi.org/10.1093/schbul/sbj014.

Bernstein, D.P., Stein, J.A., Newcomb, M.D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., 2003. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse Negl. 27 (2), 169–190. https://doi.org/10.1016/S0145-2134(02)00541-0.

Crump, C., Sundquist, K., Winkleby, M.A., Sundquist, J., 2013. Comorbidities and mortality in bipolar disorder: a Swedish national cohort study. JAMA Psychiatr. 70 (9), 931–939. https://doi.org/10.1001/jamapsychiatry.2013.1394.

Dome, P., Rihmer, Z., Gonda, X., 2019. Suicide risk in bipolar disorder: a brief review. Medicina 55 (8), 403. https://doi.org/10.3390/medicina55080403.

Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., Marks, J.S., 1998. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) Study. Am. J. Prev. Med. 14 (4), 245–258. https://doi.org/10.1016/S0749-3797(98)00017-8.

Fergusson, D.M., Horwood, L.J., Boden, J.M., 2011. Structural equation modeling of repeated retrospective reports of childhood maltreatment. Int. J. Methods Psychiatr. Res. 20 (2), 93–104. https://doi.org/10.1002/mpr.337.

Gaysina, D., Cohen-Woods, S., Chow, P.C., Martucci, L., Schosser, A., Ball, H.A., Tozzi, F., Perry, J., Muglia, P., Craig, I.W., 2009. Association of the dystrobrevin binding protein 1 gene (DTNBP1) in a bipolar case–control study (BACCS). Am. J. Med. Genet. Part B: Neuropsychiatric Genetics 150 (6), 836–844. https://doi.org/10.1002/ajmg.b.30906.

Geoffroy, M.-C., Arseneault, L., Girard, A., Ouellet-Morin, I., Power, C., 2022. Association of childhood bullying victimisation with suicide deaths: findings from a 50-year nationwide cohort study. Psychol. Med. 1–8. https://doi.org/10.1017/S0033291722000836.

Goodwin, F.K., Jamison, K.R., 2007. Manic-depressive Illness: Bipolar Disorders and Recurrent Depression, second ed. Oxford University Press, New York, NY.

Hosang, G.M., Fisher, H.L., Cohen-Woods, S., McGuffin, P., Farmer, A.E., 2017. Stressful life events and catechol-O-methyl-transferase (COMT) gene in bipolar disorder. Depress. Anxiety 34 (5), 419–426. https://doi.org/10.1002/da.22606.

Hosang, G.M., Fisher, H.L., Hodgson, K., Maughan, B., Farmer, A.E., 2018. Childhood maltreatment and adult medical morbidity in mood disorders: comparison of unipolar depression with bipolar disorder. Br. J. Psychiatr. 213 (5), 645–653. https://doi.org/10.1192/bjp.2018.178.

Hosang, G.M., Manoli, A., Shakoor, S., Fisher, H.L., Parker, C., under review. Reliability and Convergent Validity of Retrospective Reports of Childhood Maltreatment by Individuals with Bipolar Disorder.

Hosang, G.M., Uher, R., Maughan, B., McGuffin, P., Farmer, A.E., 2012. The role of loss and danger events in symptom exacerbation in bipolar disorder. J. Psychiatr. Res. 46 (12), 1584–1589. https://doi.org/10.1016/j.jpsychires.2012.07.009.

Lereya, S.T., Copeland, W.E., Costello, E.J., Wolke, D., 2015. Adult mental health consequences of peer bullying and maltreatment in childhood: two cohorts in two countries. Lancet Psychiatr. 2 (6), 524–531. https://doi.org/10.1016/S2215-0366(15)00165-0.

Merikangas, K.R., Jin, R., He, J.-P., Kessler, R.C., Lee, S., Sampson, N.A., Viana, M.C., Andrade, L.H., Hu, C., Karam, E.G., 2011. Prevalence and correlates of bipolar spectrum disorder in the world mental health survey initiative. Arch. Gen. Psychiatr. 68 (3), 241–251. https://doi.org/10.1001/archgenpsychiatry.2011.12.

Michalak, E.E., Yatham, L.N., Kolesar, S., Lam, R.W., 2006. Bipolar disorder and quality of life: a patient-centered perspective. Qual. Life Res. 15 (1), 25–37. https://doi.org/10.1007/s11136-005-0376-7.

Noorazar, S.G., Mohebbi, M., Alizadeh-Maralani, F., 2021. The retrospective bullying experiences questionnaire (RBEQ): its psychometric properties in Iranian University students. Psychol. Sch. 58, 1673–1689. https://doi.org/10.1002/pits.22522.

Olweus, D., Limber, S., Mihalic, S., 1999. Blueprints for violence prevention, book nine: bullying prevention program. Boulder, CO: Center Stud Prevent. Violen. 12 (6), 256–273.

Osman, A., Bagge, C.L., Gutierrez, P.M., Konick, L.C., Kopper, B.A., Barrios, F.X., 2001. The Suicidal Behaviors Questionnaire-Revised (SBQ-R): validation with clinical and nonclinical samples. Assessment 8 (4), 443–454. https://doi.org/10.1177/107319110100800409.

Park, Y.-M., Shekhtman, T., Kelsoe, J.R., 2020. Effect of the type and number of adverse childhood experiences and the timing of adverse experiences on clinical outcomes in individuals with bipolar disorder. Brain Sci. 10 (5), 254. https://doi.org/10.3390/brainsci10050254.

R Core Team, 2020. R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria. URL. https://www.R-project.org/.

Schäfer, M., Korn, S., Smith, P.K., Hunter, S.C., Mora-Merchán, J.A., Singer, M.M., Van der Meulen, K., 2004. Lonely in the crowd: recollections of bullying. Br. J. Dev. Psychol. 22 (3), 379–394. https://doi.org/10.1348/0261510041552756.

Shugar, G., Schertzer, S., Toner, B.B., Di Gasbarro, I., 1992. Development, use, and factor analysis of a self-report inventory for mania. Compr. Psychiatr. 33 (5), 325–331. https://doi.org/10.1016/0010-440X(92)90040-W.

Simon, J., Pari, A.A.A., Wolstenholme, J., Berger, M., Goodwin, G.M., Geddes, J.R., 2021. The costs of bipolar disorder in the United Kingdom. Brain and Behavior 11 (10), e2351. https://doi.org/10.1002/brb3.2351.

Takizawa, R., Maughan, B., Arseneault, L., 2014. Adult health outcomes of childhood bullying victimization: evidence from a five-decade longitudinal British birth cohort. Am. J. Psychiatr. 171, 777–784. https://doi.org/10.1176/appi.ajp.2014.13101401.

Upthegrove, R., Chard, C., Jones, L., Gordon-Smith, K., Forty, L., Jones, I., Craddock, N., 2015. Adverse childhood events and psychosis in bipolar affective disorder. Br. J. Psychiatr. 206 (3), 191–197. https://doi.org/10.1192/bjp.bp.114.152611.

Wing, J.K., Babor, T., Brugha, T., Burke, J., Cooper, J.E., Giel, R., Jablenski, A., Regier, D., Sartorius, N., 1990. SCAN: schedules fonr clinical assessment in neuropsychiatry. Arch. Gen. Psychiatr. 47 (6), 589–593. https://doi.org/10.1001/archpsyc.1990.01810180089012.