

Moderation role of family history of suicidal behavior in the relationship between childhood trauma and lifetime suicide attempts among children and adolescents with bipolar disorders

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BACKGROUND

Suicidal behavior is probably the result of a complex interaction between biological and environmental factors (1, 2, 3).

This study aims to investigate if a family history of suicidal behavior in first degree relatives of children and adolescents with bipolar disorders (BD) moderates the association between childhood trauma and lifetime suicide attempts.

METHODS

The psychiatric diagnosis was assessed using the MINI International Neuropsychiatric Interview for children and adolescents, English version (MINI KID) (4). The Children's Depression Rating Scale (CDRS) was used to evaluate depressive symptoms and the Childhood Trauma Questionnaire (CTQ) to assess the history of childhood trauma. Suicide attempt information was provided by the Columbia-Suicide Severity Rating Scale (C-SSRS). During the interview, the investigator questioned about "Family History of Suicidal Behavior (attempts, self-mutilation, and/or completed suicide) in first degree relatives" (FHSB). We conducted moderation analysis using SPSS PROCESS v3.5.3, controlling for age, sex, and depressive symptoms to investigate the potential moderation role of FHSB on the association between different types of childhood trauma and a history of lifetime suicide attempts.

RESULTS

Among the 53 children and adolescents with BD, 16 (30.2%) reported a lifetime history of suicide attempts, which was associated with significantly higher scores of emotional abuse ($p=0.03$), physical abuse ($p=0.03$), and emotional neglect ($p=0.001$) (Table 1).

Moderation analyses showed that the association between emotional abuse, physical abuse, emotional neglect, and history of lifetime suicide attempt was significant only in the presence of a family history of suicidal behavior ($p=0.02$, $p=0.049$, and $p=0.008$, respectively) (Tables 2 and 3).

Table 1. Participants' comparison according to the presence or absence of lifetime history of suicide attempts

Variables	Suicide attempts ^a			Pearson chi ² /test statistic ^b (p-value)
	Total	Yes	No	
	53	16 (30.2%)	37 (69.8%)	
	n (%)	n (%)	n (%)	
Sex				
Female	32 (60.4)	11 (68.8)	21 (56.8)	0.672 (0.41)
Male	21 (39.6)	5 (31.3)	16 (43.2)	
	mean (SD)	mean (SD)	mean (SD)	
Age	13.1 (3.2)	14.6 (2.6)	12.5 (3.2)	409.0 (0.03)
Emotional abuse ^c	11.9 (6.4)	15.1 (7.1)	10.6 (5.7)	405.0 (0.03)
Physical abuse ^c	9.1 (5.1)	10.4 (3.6)	8.6 (5.6)	406.5 (0.03)
Sexual abuse ^c	9.1 (6.8)	10.1 (6.7)	8.7 (6.9)	348.5 (0.27)
Emotional neglect ^c	10.2 (5.4)	14.0 (5.2)	8.5 (4.6)	460.5 (0.001)
Physical neglect ^c	8.0 (3.9)	8.2 (3.2)	7.9 (4.2)	334.0 (0.44)
Depressive symptoms ^d	37.7 (13.5)	38.1 (18.4)	37.5 (11.1)	285.0 (0.83)
	n (%)	n (%)	n (%)	
Family history of suicidal behavior				
Yes	20 (37.7)	9 (56.2)	11 (29.7)	3.344 (0.07)
No, unsure or undetermined	33 (62.3)	7 (43.8)	26 (70.3)	

^aAccording to C-SSRS; ^bMann-Whitney test; ^cAccording to CTQ; ^dCDRS.

CRDS: Children's Depression Rating Scale; C-SSRS: Columbia-Suicide Severity Rating Scale; CTQ: Childhood Trauma Questionnaire.

Table 3. Conditional effects of childhood trauma on the lifetime history of suicide attempts depending on family history of suicidal behavior

Predictor	Family history of suicidal behavior	z scores	Effect	95% CI	p value
Emotional abuse	Presence	2.2201	0.2705	0.0317 to 0.5094	0.02
	Absence	-0.2091	-0.0157	-0.1626 to 0.1313	0.83
Physical abuse	Presence	1.9710	0.3151	0.0018 to 0.6285	0.049
	Absence	-0.6154	-0.0654	-0.2739 to 0.1430	0.54
Emotional neglect	Presence	2.6561	0.5820	0.1525 to 1.0114	0.008
	Absence	1.4935	0.1671	-0.0522 to 0.3865	0.13

Table 2. Model summary for the association between childhood trauma and lifetime history of suicide attempts moderated by family history of suicidal behavior

	se	z	coeff	95% CI	p value
Emotional abuse	0.0750	-0.2091	-0.0157	-0.1626 to 0.1313	0.83
Age	0.1404	0.6413	0.0901	-0.1852 to 0.3653	0.52
Sex	0.8228	0.5698	0.5688	-1.1439 to 2.0816	0.57
CDRS	0.0281	-0.5901	-0.166	-0.0716 to 0.0385	0.55
Family history of SB	1.9745	-1.2982	-2.5634	-6.4335 to 1.3066	0.19
Int_I	0.1411	2.0282	0.2862	0.0096 to 0.5628	0.04
X*W Chi-sq 5.25; p=0.02					
Model p=0.01; McFadden 0.25; CoxSnell 0.27; Nagelkerke 0.38					
Physical abuse	0.1063	-0.6154	-0.0654	-0.2739 to 0.1430	0.58
Age	0.1419	1.2436	0.1765	-0.1017 to 0.4574	0.21
Sex	0.8542	0.2103	0.1796	-1.4945 to 1.8537	0.83
CDRS	0.0278	-0.0199	-0.0006	-0.0551 to 0.0539	0.98
Family history of SB	1.7908	-1.2689	-2.2724	-5.7823 to 1.2375	0.20
Int_I	0.1846	2.0616	0.3806	0.0188 to 0.7424	0.04
X*W Chi-sq 5.4736; p=0.02					
Model p=0.02; McFadden 0.23; CoxSnell 0.24; Nagelkerke 0.35					
Emotional neglect	0.1119	1.4935	0.1671	-0.0522 to 0.3865	0.13
Age	0.1646	-0.4475	-0.0736	-0.3962 to 0.2489	0.65
Sex	0.9466	1.1417	1.0808	-0.7746 to 2.9362	0.25
CDRS	0.0349	-1.4289	-0.0499	-0.1184 to 0.0186	0.15
Family history of SB	2.4210	-1.2950	-3.1351	-7.881 to 1.6099	0.19
Int_I	0.2125	1.9524	0.4148	-0.0016 to 0.8312	0.05
X*W Chi-sq 5.20; p=0.02					
Model p<0.001; McFadden 0.36; CoxSnell 0.36; Nagelkerke 0.51					

CONCLUSION

In children and adolescents with BD, the risk of suicide attempts associated with childhood trauma may be moderated by a family history of suicidal behavior in first degree relatives.

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