

Relationship between maternal depression as a risk factor for childhood trauma and mood disorders in young adults

Relação entre depressão materna como fator de risco para trauma na infância e transtornos de humor em jovens

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Abstract

Background: Maternal depression may be a risk factor for childhood trauma (CT), with resultant offspring development of mood disorders (MD) in adult life. **Objective:** To verify the relationship between maternal depression (as a risk factor for childhood trauma) and mood disorders in young adults. **Methods:** The sample was composed of 164 young adults and their mothers. Maternal depression was identified through the Mini International Neuropsychiatric Interview (M.I.N.I.). Mood Disorders in the young adults were confirmed with the Structured Interview for the DSM-IV (SCID), whereas the CT was evaluated using the Childhood Trauma Questionnaire (CTQ). **Results:** In the group of young adults with MD, individuals who had depressed mothers presented higher mean scores of CT in comparison to the ones who did not have mothers with Depression ($p < 0.005$). Childhood trauma was also associated with lower social classes ($p < 0.005$). In the group of young adults without MD, the only variable that was associated with CT was the young adult's (not) current work ($p < 0.005$). **Discussion:** Maternal depression was considered to be a risk factor for CT and MD in young adults. Thus, preventing and treating maternal psychiatric disorders may diminish the risk of offspring childhood trauma, and, consequently, avoid negative effects in the offspring's adult life.

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Keywords: Mood disorders, childhood trauma, maternal depression.

Resumo

Contexto: Depressão materna pode ser um fator de risco para trauma na infância (TI), com consequente desenvolvimento de transtornos de humor (TH) em seus filhos na vida adulta. **Objetivo:** Verificar a relação entre depressão materna (como fator de risco para TI) e TH em jovens. **Métodos:** A amostra foi composta de 164 jovens adultos e suas mães. A depressão materna foi identificada por meio do *Mini International Neuropsychiatric Interview* (M.I.N.I.). Transtornos de humor nos jovens foram confirmados pela entrevista estruturada para o DSM-IV (SCID), enquanto o TI foi avaliado pelo Questionário de Trauma na Infância (CTQ). **Resultados:** No grupo de jovens com TH, indivíduos que tiveram mães deprimidas apresentaram escores médios de TI mais altos em comparação aos que não tinham mães com depressão ($p < 0,05$). Trauma na infância também esteve associado com classes sociais desfavorecidas ($p < 0,05$). No grupo de jovens sem TH, a única variável associada ao TI foi o (não) trabalho do jovem ($p < 0,05$). **Conclusões:** A depressão materna foi considerada fator de risco para TI e TH nos jovens. Portanto, prevenir e tratar transtornos psiquiátricos maternos pode diminuir o risco de trauma infantil no filho e, por consequência, evitar efeitos negativos na vida adulta da prole.

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Palavras-chave: Transtornos de humor, trauma na infância, depressão materna.

Introduction

Childhood trauma may be defined as the exposure of a child to circumstances of physical, psychological or sexual violence and/or neglect that endanger the child's life or physical integrity^{1,2}. It has been recognized as an important stress factor that could lead to the development of psychiatric disorders in adult life^{3,4}. Mood disorders have been strongly related to childhood abuse^{5,6}. One study that evaluated 100 patients with bipolar disorder concluded that half of these individuals had suffered severe trauma during childhood, which may have contributed to more complex psychopathological manifestations in adulthood³.

Literature states that negative life events, such as the loss of affective bonds or the separation from one or both parents as a result of divorce or abandonment situations, are important depression-related symptoms in adult life⁷. Children absolutely rely on their caretakers

to keep them safe and what threatens the caretaker, or makes the caretaker unavailable, threatens the child⁸. On this matter, studies reveal that maternal mental disorder, low maternal schooling and limited child-mother communication are circumstances that have a cumulative effect and may increase the possibility of compromising the child's development⁹⁻¹¹. Specifically, maternal depression has a negative influence over child development, since the mother may be more neglectful of the children's daily lives and not provide them with sufficient support and affection¹². Furthermore, Sellers *et al.*¹³ verified that having a mother with recurrent depression increases the risk for depression in teenagers, which is a useful reminder about the complex interaction of factors that may determine children's vulnerability.

In Brazil, there are few epidemiological researches on the relationship between maternal depression during childhood and mood disorders in adult life. The most consistent evidence is regarding

mental health problems in children and adolescents in vulnerability situations, such as poverty, physical punishments, and the parents' marital violence¹⁴. Consequently, further research on the field of negative life events is needed in order to determine the environmental impact related to the onset of psychiatric disorders¹⁵.

Thus, the aim of this study was to verify the relationship between maternal depression as a risk factor for childhood trauma and the presence of mood disorders in young adults (their offspring), as well as to investigate associated sociodemographic factors.

Methods

This was a cross-sectional study nested within a population-based study in the city of Pelotas, south of Brazil. Regarding the population-based study that originated the present study, sample was composed of 1,560 young individuals aged between 18 and 24 years, who lived in the urban area of Pelotas. The sample was selected in clusters from August 2007 to December 2008, from a population of 39,667 in the desired age range, along the divisions used by the current census of 448 sectors in the city¹⁶. From these, 89 areas were systematically included in the study in order to guarantee the needed sample. Full details on the study have been published elsewhere¹⁷.

Participants

For the purposes of the present study, there was an attempt to recruit every person with a past or current history of a manic or hypomanic episode – the target sample – from the population-based study. According to these criteria, 93 young adults had a current or prior history of bipolar disorder. Additionally, two groups of control subjects were recruited. People without any history of affective disorder were randomly selected and matched for gender, age and socioeconomic situation – i.e. a healthy control sample. Importantly, people from this control group were not excluded on account of any other mental disorders. The second control group was composed of those with a current depression but no past history of (hypo)mania. This was, thus, an active control group. Of these, data on 231 subjects were obtained (136 diagnosed with mood disorder and 95 without mood disorder). In order to improve diagnosis reliability, the Structured Clinical Interview for DSM-IV (SCID) was used as the group-defining criterion for this study.

After this stage, there was an attempt to evaluate the mothers of all 231 individuals in order to verify the relationship between the diagnoses (maternal depression and the young adult's mood disorder). However, only 164 mothers were found and/or agreed to participate in the study. Hence, the final sample was composed of 164 young adults with ($n = 98$) and without ($n = 66$) mood disorders, whose mothers were evaluated for current and past depression.

For classification purposes, depression or bipolar disorder was considered as a mood disorder.

Data collection

Interviews occurred in a proper room at the university's hospital – *Hospital Universitário São Francisco de Paula da Universidade Católica de Pelotas*. The young adults and their mothers who could not come to the hospital were visited in their domicile for data collection. Data collection occurred from March 2009 to May 2010.

Instruments

The Brazilian version of the Mini International Neuropsychiatric Interview¹⁸ was used to assess for mood disorders in the initial sample ($N = 1560$) of young adults and to evaluate maternal mental disorder in this study ($N = 164$). It is a short standardized diagnostic interview based on the DSM-IV diagnostic criteria. The coefficients (Kappa, sensibility and specificity) of the original version of the MINI¹⁹ were good or very good for all diagnoses with the exception of generalized

anxiety disorder ($\kappa = .36$), agoraphobia (sensibility = .59) and bulimia ($\kappa = .53$). Also, inter-rater and test-retest reliability were good. Regarding the Brazilian version, the reliability coefficients were good. Additionally, the Structured Clinical Interview for DSM-IV (SCID)²⁰ was used to confirm the diagnoses of the young adults.

Childhood trauma was evaluated using the Childhood Trauma Questionnaire (CTQ), which is a self-report scale that investigates history of childhood neglect and/or abuse in five trauma domains: physical abuse, emotional abuse, sexual abuse, emotional neglect, and physical neglect. The original version of the instrument presented good validity and reliability coefficients, with internal consistency medians ranging from $\alpha = .66$ to $\alpha = .92$ ²¹. The Brazilian translated and adjusted version is appropriate for evaluating people older than 12 years old²². The CTQ is an easily understandable 5-item Likert scale on which the individual rates the frequency of 28 sentences related to negative events during childhood.

Other measures included a questionnaire for sample characterization. It contained the following variables: age, gender, schooling, work, and tobacco and alcohol use/abuse. Alcohol abuse was assessed through the CAGE (Cut down, Annoyed by criticism, Guilty and Eye-opener) scale²³. The scale was validated to Brazil using a cutoff point of two affirmative answers to indicate alcohol abuse.

The evaluation of socioeconomic classification was carried out through the ABEP (*Associação Brasileira de Empresas de Pesquisa*)²⁴, which is a scale based on the accumulation of material assets and on the schooling of the head of the household. It categorizes people into classes (A, B, C, D, and E) according to the scores, where A refers to the highest socioeconomic class and E to the lowest one.

Data analyses

For analysis purposes, the young adults were divided into two groups: with mood disorders and without mood disorders.

Between-group comparisons were conducted with the Student's t-test or analysis of variance (ANOVA) for continuous variables and with the Pearson for categorical data. In order to control for possible confounding factors, a linear regression theoretical model was built including all variables showing a p -value < 0.2 ²⁵. The first hierarchical level contained social and demographic variables; the second one was composed of behavioral variables; the third level referred to variables related to maternal mental health. Results were considered significant if p -value ≤ 0.05 .

Due to difficulties observed in obtaining precise information on the age of onset of maternal mood disorder during the interview – which resulted in a high frequency of missing values – we opted for not including these variables (i.e., past depressive episode and age of onset) in the present analyses.

Ethical considerations

The study was approved by the Ethics in Research Committee of the university, according to the protocol 2009/14. All ethical principles established by the Health National Council Resolution 196 from October 10, 1996, were respected. All participants (young adults and their mothers) received information regarding the objectives of the study and then signed a consent form. Participants who presented any indication of psychological or psychiatric disorder were referred for treatment at a specific campus at the University (*Campus da Saúde da Universidade Católica de Pelotas*).

Results

Clinical and demographical information for the sample of young adults is summarized in table 1. The total sample was composed by 164 young adults, from whom 98 (59.8%) presented a positive diagnosis for mood disorders and 66 participants (40.2%) did not show any mood disorder.

No significant difference was observed in the frequency of maternal depression between the groups of young adults with (39.8%) and without (27.3%) mood disorders ($p = 0.138$). However, individuals with mood disorders showed a significantly higher mean CTQ score compared to the group without mood disorders. Also, the group of young adults with mood disorders had significantly more females ($p = 0.018$) and less individuals currently studying ($p = 0.036$) relative to the subjects without mood disorders.

Table 2 presents comparisons on mean CTQ scores within the groups of young adults with and without mood disorders according to sociodemographical factors. In the group of young adults without mood disorder, significantly higher mean CTQ scores were observed in the following subgroup of patients: not currently working, with lower socioeconomic status and with a positive history of maternal depression.

The linear regression model compared the groups with and without mood disorders. Childhood trauma scores in the group without mood disorder remained associated with current work ($p = 0.017$), even after adjusting for confounding factors (age, gender, ABEP, current studying, current working, tobacco use, alcohol abuse and maternal depressive episode). There was a 5.94-point decrease (CI 95%: -10.75; -1.13) in mean CTQ score in individuals who were working, when compared to those who were not working. Regarding the clinical group, childhood trauma scores remained associated with socioeconomic classification ($p = 0.012$) and maternal depressive episode ($p = 0.030$). There was a 4.52-point increase (CI 95%: 1.05; 7.99) in individuals with mood disorder as socioeconomic classification decreased. Moreover, individuals with depressed mothers had a 5.36-point increased (CI 95%: 1.20; 10.17) childhood trauma mean, when compared to those who did not have depressed mothers.

Discussion

This study verified the association between maternal depression and offspring's mood disorders in adulthood. In order to evaluate such relationship, we used detailed and internationally validated scales and a refined method of data collection regarding the evaluation of the dyad mother-young adult. Our results reveal that even though there was no significant difference concerning the prevalence of maternal depression between the groups, maternal depression was significantly associated with higher trauma scores in the clinical group, when compared to the individuals from the same group who did not have depressed mothers. These data suggest that the impact of maternal depression may be a risk factor for childhood trauma and mood disorders in adult life.

It is not always easy, or even necessary, to understand how a specific new symptom relates to the traumatic event to deduce that there is a causal relation⁸. It is well-known that the relationship between depressed mothers and psychiatric disorders in the offspring has a multidetermined etiology that may include both genetic influence and psychological distress caused by environmental circumstances. Negative developmental outcomes are produced by a complex combination and interrelationship of genetic, biological, psychological and environmental risk factors^{26,27}. Moreover, genetic aspects may remain latent until the individual is exposed to adverse and stressful situations that are out of his control, such as unfavorable socioeconomic circumstances, which may then trigger the onset of the mental disorder^{28,29}.

Considering maternal depression as an environmental risk factor for mood disorders in the offspring, the impact of the disorder on the mother impinges on her relationship with her child, alters

Table 1. Clinical and demographical characteristics of the young adult sample

Variables (N)	Without MD* (N = 66) N (%)	With MD* (N = 98) N (%)	p-value†	Df
Age (164)			0.117	1
18-22 years old	30 (45.5%)	58 (59.2%)		
23-27 years old	36 (54.5%)	40 (40.8%)		
Gender (164)			0.018	1
Female	39 (59.1%)	76 (77.6%)		
Male	27 (40.9%)	22 (22.4%)		
ABEP** (164)			0.129	2
A+B	24 (36.4%)	29 (29.6%)		
C	36 (54.5%)	51 (52.0%)		
D+E	06 (09.1%)	18 (18.4%)		
Currently studying (164)			0.036	1
No	30 (45.5%)	62 (63.3%)		
Yes	36 (54.5%)	36 (36.7%)		
Currently working (93)*****			0.682	1
No	15 (22.7%)	30 (30.6%)		
Yes	19 (28.8%)	29 (29.6%)		
Alcohol abuse (164)			0.476	1
No	50 (75.8%)	68 (69.4%)		
Yes	16 (24.2%)	30 (30.6%)		
Tobacco use (163)*****			0.235	1
No	52 (78.8%)	69 (70.4%)		
Yes	13 (19.7%)	29 (29.6%)		
Maternal depressive episode (164)			0.138	1
No	48 (72.7%)	59 (60.2%)		
Yes	18 (27.3%)	39 (39.8%)		
CTQ*** – mean (sd****)	36.31(6.95)	45.81 (12.18)	< 0.001	162
Total	66 (40.2%)	98 (59.8%)		

* MD: mood disorders. ** ABEP: Associação Brasileira de Empresas e Pesquisas (Socioeconomic Classification). *** CTQ: Childhood Trauma Questionnaire. **** sd: standard-deviation. ***** The variable contains missing values. † Fisher.

Table 2. Factors associated with the occurrence of childhood trauma in young adults with and without mood disorders

Variables	CTQ mean in young adults (sd ^{***})			
	Without MD*	p-value	With MD*	p-value
Age		0.120		0.662
18-22 years old	34.86 (6.59)		45.36 (11.99)	
23-27 years old	37.52 (7.10)		46.47 (12.58)	
Gender		0.559		0.969
Female	35.89 (6.33)		45.84 (11.75)	
Male	36.95 (7.84)		45.72 (13.87)	
ABEP**		0.713		0.012
A+B	36.75 (7.90)		42.48 (08.55)	
C	35.97 (6.04)		45.54 (12.57)	
D+E	36.66 (9.09)		51.94 (14.23)	
Currently studying		0.298		0.557
No	37.30 (7.34)		46.37 (11.42)	
Yes	35.50 (6.59)		44.86 (13.51)	
Currently working		0.016		0.967
No	39.46 (7.52)		47.30 (11.44)	
Yes	33.73 (5.60)		47.17 (11.96)	
Alcohol abuse		0.464		0.429
No	35.96 (7.00)		46.38 (13.32)	
Yes	37.43 (6.88)		44.53 (09.17)	
Tobacco use		0.118		0.131
No	35.50 (6.73)		44.60 (12.03)	
Yes	38.84 (7.16)		48.69 (12.25)	
Maternal depressive episode		0.451		0.021
No	35.85 (6.26)		43.38 (10.60)	
Yes	37.55 (8.59)		49.48 (13.57)	

* MD: mood disorders. ** ABEP: Associação Brasileira de Empresas e Pesquisas (Socioeconomic Classification). *** sd: standard-deviation.

her responsiveness, and thus instigates the child's development of symptoms. In the compound effect, the mother and the child are both traumatized, and each exacerbates the symptomatology of the other⁸. Moreover, studies reveal that depressed mothers tend to be more neglectful of their children, although only few studies concern physical, emotional and sexual abuse from depressed mothers⁵⁰.

In this study, we found that young adults with mood disorders and from lower socioeconomic classes presented higher childhood trauma scores, when compared to the ones from higher classes. This finding corroborates the results of other studies^{31,32} in demonstrating that neglected groups tend to experience more economic difficulties. For instance, a child may be neglected through the non-satisfaction of the child's basic needs due to family poverty³³.

Concerning the group without mood disorders, childhood trauma was significantly associated with no current work. This result is consistent with other studies that reveal that adults with a history of childhood trauma present an elevated risk for financial difficulties, unemployment, and loss of productivity³⁴. In addition, several studies suggest that childhood trauma is related to difficulties regarding problem solving, abstract thinking, attention and focusing³⁵⁻³⁷.

Some limitations must be noted. First, we had a relatively small sample and irregular sample sizes between the groups, which may have affected statistical power in some analyses. For instance, the prevalence of maternal depression in both groups may be overestimated by the evaluation instrument, which is quite sensitive.

Additionally, it is possible that the young adults with mood disorders may remember more traumatic events because of the disorder itself. On the other hand, people who suffer sexual trauma often do not report it or even do not remember it, possibly because recalling these events would threaten psychic balance and lead to psychological distress^{38,39}. Furthermore, the influence of maternal depression on the emotional development of the child in adulthood is best evaluated through longitudinal studies. In our study, the maternal depression

variable referred to a current episode, which does not guarantee that the mothers were depressed during their young adult's childhood (which is the moment evaluated by the CTQ). However, such limitations do not invalidate our results, since 80% of depressed women present more than one lifetime depressive episode, and approximately one third of these women suffer from recurrent episodes, which also elevates the probability of a new episode⁴⁰. Recurrence and the chronicity of maternal depression have been acknowledged in several studies⁴¹⁻⁴⁴, with special emphasis regarding the duration of the episodes as a potentializing condition for offspring mental health and cognition impairments.

Despite these limitations, this study is an important contribution on the subject of the relationship between maternal disorder and the onset of psychiatric disorders in their children. These data reveal the importance of identifying depressive symptoms in primary care services, which may also be useful for the early detection of problems regarding children, especially children from low socioeconomic classes who have poor access to mental health services⁴⁵. Moreover, improving familial circumstances and diminishing stress-related symptoms may help to inhibit the manifestation of the environmental factor⁴⁶. Thus, preventing and treating maternal psychiatric disorders may lower the risk of negative effects on the children.

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