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# Childhood Trauma and Quality of Life in Bipolar Disorder: A Tunisian Study

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**Abstract:** ***Background: Childhood trauma (CT) has been considered as a promising environmental determinant associated to bipolar disorder (BD). Early trauma experiences have been suggested to contribute to both onset and clinical course of BD. Few studies have examined the relationship between childhood trauma and quality of life (QoL) in bipolar patients. Aims: Our study aims to assess childhood trauma in bipolar patients and to examine the relationship between childhood trauma and quality of life. Methods: We conducted a cross-sectional study, including 60 BD patients, in euthymia. We assessed CT history using Childhood Trauma Questionnaire and QoL using the 36-item Short Form Health Survey (SF-36) then we examined childhood trauma within the group of patients according to QoL. Results: The majority of patients (81.66%) reported at least one type of childhood trauma history. The assessment of quality of life revealed a global average of 64.48. Mental component was impaired while physical component was preserved. Physical abuse was associated with a deterioration of QoL on the whole (p=0.01), particularly for its mental component (p=0.01). Physical neglect was linked to a deterioration of QoL on the whole (p=0.006), particularly for its physical component (p=0.02). Emotional abuse was associated with a deterioration of the physical component of QoL (p=0.02). Conclusion: BD is associated with a history of childhood maltreatment. Physical abuse and physical neglect are associated with deterioration of QoL in its mental component while emotional abuse is linked to deterioration of QoL in its physical component.***

**Keywords:** bipolar disorder, childhood trauma, quality of life

## 1. Introduction

Bipolar disorder (BD) is a complicated, chronic disorder characterized by recurrent episodes of depression and mania or hypomania with periods of normal mood.[1]

BD has a major impact on psychosocial and professional functioning. It significantly impairs quality of life (QoL) and has an important social cost.[2]

Beyond genetic factors, environmental stressors have been recognized as relevant contributors to the genesis of BD and efforts to identify specific factors have been intensified over the last decades.[3] In this context, literature data suggest early trauma to be a promising environmental determinant linked to BD.[4] Recent findings have estimated that more than half of bipolar patients would have a history of childhood maltreatment.[5,6] Childhood trauma has been demonstrated to be involved in both onset and specific clinical features of BD [5,7,8], being particularly associated with worsening clinical course of the disease.[10]

On the other hand, a growing body of evidence indicates that adverse childhood experiences exert negative effects on quality of life in general population[11] and particularly in subjects with affective disorders including BD[6].

Therefore, the aim of this study was to assess CT in patients with BD and to investigate the relationship between CT and QoL as measured by Short Form Health Survey Questionnaire (SF-36) in BD.

## 2. Materials and Methods

### 2.1 Participants

We conducted a cross-sectional study between December 2014 and February 2016. We enrolled 60 BD euthymic patients presenting to the psychiatry maintenance treatment consultation at Departments A and C of Razi psychiatric hospital in Tunisia. Patients were diagnosed on the basis of the diagnostic criteria of DSM IV. Exclusion criteria were mental retardation, relevant cognitive impairment, traumatic head injury with loss of consciousness, lifetime history of major medical or neurobiological disorders. All patients who were scored lower than 5 points on the Young Mania Rating Scale (YMRS)[12] and below 7 points on the Hamilton Depression Rating Scale (HDRS)[13] were considered as euthymic. We assessed CT history and QoL in bipolar patients then we examined the relationship between CT and QoL. Permission from ethics committee was obtained.

### 2.2 Measurements

Socio-demographic measures included age, sex, marital status, educational level and professional occupation. We assessed the lifetime clinical characteristics of BD including age of onset, duration of illness, total number of hospitalizations, suicidal attempts and substances abuse. Data was registered by using medical files and missing information was completed when interviewing patients.

CT events were recorded using the short form of the Childhood Trauma Questionnaire (CTQ)[14]. CTQ is a 28-item self-report retrospective inventory intending to assess maltreatment in childhood and adolescence. The CTQ short-form contains 5 subscales: Emotional Abuse (EA), Physical Abuse (PA), Sexual Abuse (SA), Emotional Neglect (EN) and Physical Neglect (PN). Internationally widely used, CTQ is known to have strong psychometric properties and scores have been demonstrated to remain stable over time[15].

Quality of life was assessed using the 36-item Short Form Health Survey (SF-36) questionnaire[16]. The SF-36 contains 36 items measuring 8 dimensions of health and well-being. These attributes are combined to provide a physical component summary (PCS) and a mental component summary (MCS). PCS consists of subscales: physical functioning, role limitation due to physical health, bodily

pain and general health. MCS consists of subscales: mental health, role limitation due to emotional problems, social functioning and vitality. A global average score was calculated and we considered that quality of life was deteriorated if the score was less than 66.7 according to the threshold value of Lean.[17] We used the Arabic validated version.[18]

### 2.3 Statistical Analyses

All the analysis was performed using the Statistical Package for Social Sciences (SPSS) for Windows 23.0. We conducted a descriptive study then an analytical study.

Shapiro-Wilk Test was used to specify whether variables had a normal distribution. When variables were normally distributed, differences between groups were analyzed using Student Test. Otherwise, groups were compared using Mann-Whitney Test. We examined relationships between 2 continuous variables by using Spearman Test. The level of significance was set at 0,05 in all measures.

## 3. Results

### 3.1 Childhood trauma in bipolar disorder

Sixty patients with BD diagnosis were included in the study. Socio-demographic and clinical data are summarized in table 1.
The majority of patients (81.66%) reported at least one type of childhood trauma history.

Physical neglect was the most frequent category of trauma observed in 56.66% of patients (n=34), 53.33% of patients (n=32) experienced emotional neglect, 50% of patients (n=30) experienced emotional abuse, 41.7% of patients (n=25) experienced physical abuse and 30% of patients (n=18) were sexually abused in childhood or adolescence. About third of the study group (35%, n=21) experienced severe childhood maltreatment in at least one domain.

The prevalence of severity level of each childhood trauma subscale is given in table 2.

### 3.2 Quality of life in bipolar patients

The assessment of quality of life revealed a global average of 64.48.Mental component was impaired while physical component was preserved. Vitality was the most deteriorated mental dimension in bipolar patients (Table 3).

### 3.3 Childhood trauma and quality of life in bipolar patients

Significant negative correlation was observed between EN and general health dimension (p=0.04). PN history was associated with impaired vitality dimension (p=0.05), emotional well-being (p=0.02), general health (p=0.01), physical score (p=0.02), mental score (p=0.01) and global score (p=0.06) of SF-36. PA history was associated with deteriorated role limitation due to emotional problems dimension (p=0.01), vitality (p=0.04), emotional well-being (p=0.04), mental score (p=0.01), and global score (p=0.01), of the SF-36. We observed significant negative correlations between PA and physical score of SF-36 and no relationships were found between SA and all dimensions of QoL. Total CTQ score was linked to impaired general health (p=0.04), physical score (p=0.04) and global score (p=0.02) of the SF-36.

## 4. Discussion

### 4.1. Childhood trauma in bipolar disorder

This study demonstrates high rates of childhood trauma history in patients with bipolar disorder. Patients with at least one domain of CT history represented 35% of the study sample. This result is slightly lower than those reported in previous studies in which this proportion was estimated between 45% et 68%.[5-7] Exploring the subscales, physical neglect was the most frequent category of trauma observed in our patients sample, unlike previous findings that showed that emotional abuse and emotional neglect were the most common domains of CT reported by patients with BD.[5,19,20] This discordance may be explained by socioeconomic factors in our developing country where families with little financial incomes have difficulties providing appropriate physical care to children.

More than half of bipolar patients (58.31%) experienced severe childhood trauma. This rate is in line with previous findings.[5,7]

The relationship between bipolar disorder and childhood trauma can be explained in several ways.

First, deleterious effects of childhood trauma mediated through several neurobiological pathways occur preferentially in subjects with genetic susceptibility according to a gene -environment interaction model and are mediated in part by epigenetic processes.[3,21] Second, early and chronic stress has been related to inhibition of neurotrophic factors synthesis and releasing in brain structures.[22,23]

Furthermore, given the high heritability of BD, childhood trauma in bipolar patients can be related to parental psychiatric disorders which might lead to offensive and hostile attitudes.[5,24] In another point of view, early bipolar disorder often occurs with behavioral disorders which may arouse aggressive parental reactions resulting in childhood maltreatment.[5]

### 4.2. The relationship between childhood trauma and quality of life in bipolar disorder

In our study, physical abuse was associated with a deterioration of QoL on the whole, particularly for its mental component. Physical neglect was linked to a deterioration of QoL on the whole, particularly in its physical component. Emotional abuse was associated with a deterioration of the physical component of QoL.

Few studies have aimed to assess the relationship between childhood trauma and quality of life in patients with bipolar disorder. The study of Erten et al indicated a significant

association between childhood trauma history and the alteration of many mental dimensions of the SF-36 as well as pain dimension.[6] This relationship was mediated by clinical features such as number of mixed episodes and rapid cycles. In the study of Sala et al, there was a clear dose-response relationship between number of CT and severity of BP across several domains, including clinical characteristics and level of psychosocial functioning at SF-12 questionnaire.[19] Serafini et al suggested that the relationship between traumatic childhood experiences and impaired physical and mental health-related quality of life among bipolar patients was related to specific sensory processing patterns and alexithymia.[25] Other studies have highlighted an association between depressive signs, impaired social functioning and difficulties in interpersonal relationships in bipolar patients who have endorsed childhood maltreatment. This association may be explained by emotional dysregulation due to long-term neurobiological changes.[26,27] On the other hand, according to psychological approaches, parent-child secure attachment relationship is a major determinant of his future abilities to engage in interpersonal relationship and live independently. When this relationship is compromised by childhood maltreatment, it damages child's self-esteem and his capacity to interact with others. Thereby, childhood trauma might impair social and psychological components of quality of life.

### 4.3. Limitations

Our study has several limitations. First, the relatively small sample size would induce the risk of statistical errors. Otherwise, one weakness of the study is the retrospective assessment of childhood trauma which might engender recall bias. Nevertheless, this report is the first Tunisian one to examine the association between childhood trauma and bipolar disorder and one of the few existing studies assessing the childhood trauma impact on quality of life in bipolar patients. Moreover, this analysis controlled for euthymic state in order to minimize the potential influence of current mood state on patients perception of their childhood.

## 5. Conclusions

Our findings provide additional evidence in favor of an association between CT and BD, and suggest a relationship between history of CT and QoL impairment in both physical and mental dimensions among bipolar patients. These results have several clinical implications. First, it should be recommended to assess systematically history of CT in clinical practice among bipolar patients in order to ensure appropriate therapeutic management. Major importance should be given to psychotherapeutic approaches including cognitive behavioral therapies, trauma-focused therapy and mindfulness to target potential late consequences of early trauma and to achieve improvements in QoL. Furthermore, since CT has been suggested to enhance stress reactivity, emotional therapies might be of great interest. Finally, it should be required to provide psychological support to bipolar parents as well as their children and to offer family therapies if needed in order to avoid conflicted family interactions.

**Table 1:** Sociodemographic and clinical features in patients with bipolar disorder

| | Patients |
|---|---|
| Male /Female n (%) | 28 (46,66%)/ 32 (53,33%) |
| Age (Years) | 41,3 ± 10,86 |
| Educational level n (%) | |
| Primary level | 26 (43,3%) |
| Secondary level | 23 (38,3%) |
| Higher level | 7 (11,7%) |
| Illiterate | 4 (6,7%) |
| Marital status n (%) | |
| Married | 25 (41,7%) |
| Single | 29 (48,3%) |
| Widow (er) | 5 (8,7%) |
| Professional activity n (%) | 31 (51,66%) |
| Current cigarette use n (%) | 31 (51,66%) |
| Current alcohol use n (%) | 10 (16,7%) |
| Current substance use n (%) | 8 (13,3%) |
| Personal history of suicide attempts n (%) | 14 (23,3%) |
| Personal history of psychiatric disorders n (%) | 27 (45%) |
| Age of onset (mean ± SD) | 25,65 ± 8,18 |
| Duration of illness (mean ± SD) | 15,77 ± 10,38 |
| Number of manic episodes (mean ± SD) | 3,66 ± 2,91 |
| Number of hypomanic episodes (mean ± SD) | 1,03 ± 3,14 |
| Number of mixed episodes (mean ± SD) | 0,7±1,255 |
| Number of depressive episodes (mean ± SD) | 1,27 ± 2,06 |
| Number of total hospitalizations (mean ± SD) | 5,25 ± 4,58 |
| Psychotic symptoms (%) | 50 (83,33%) |

SD: Standard deviation; %: rate in percentage

**Table 2:** The prevalence of severity level of each childhood trauma subscale in bipolar patients

| | None | Low | Moderate | Severe |
|---|---|---|---|---|
| EN | 46,7% | 28,3% | 13,3% | 11,7% |
| PN | 43,3% | 21,7% | 20% | 15% |
| EA | 50% | 26,7% | 11,7% | 11,7% |
| PA | 58,3% | 15% | 10% | 16,7% |
| SA | 70% | 6,7% | 20% | 3,3% |

EN: emotional neglect, PN: physical neglect, EA: emotional abuse, PA: physical abuse, SA: sexual abuse
BD: bipolar patients group, HC: healthy controls
* Mann-Whitney test: $p<0.05$

**Table 3:** Quality of life in patients with bipolar disorder

| Component | Dimension | Mean | Standard deviation |
|---|---|---|---|
| Physical | Physical functioning | 82.00 | 18.18 |
| | Role limitation due to physical health | 55.41 | 42.70 |
| | Pain | 72.04 | 28.81 |
| | General health | 59.20 | 19.91 |
| Mental | Vitality | 43.11 | 25.06 |
| | Social functioning | 73.33 | 32.90 |
| | Role limitation due to emotional problems | 66.66 | 43.39 |
| | Emotional well-being | 65.53 | 19.91 |
| Mental score | | 61.67 | 22.35 |
| Physical score | | 67.29 | 21.02 |
| Total score | | 64.48 | 18.57 |

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