Relationship between Childhood Physical Abuse and Clinical Severity of Treatment-Resistant Depression in a Geriatric Population

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Antoine Yrondi
Centre Hospitalier Universitaire de Toulouse
antoineyrondi@gmail.com
ORCID: https://orcid.org/0000-0002-2650-6080

Christophe Arbus
Centre Hospitalier Universitaire de Toulouse

Djamila Bennabi
Centre Hospitalier Universitaire de Besancon

Thierry D'Amato
Centre Hospitalier du Vinatier

Frank Bellivier
Assistance Publique - Hopitaux de Paris

Thierry Bougerol
Centre Hospitalier Universitaire Grenoble Alpes

Vincent Camus
Centre Hospitalier Regional Universitaire de Tours

Philippe Courtet
CHU Montpellier

Olivier Doumy
Centre Hospitalier Charles Perrens

Jean Baptiste Genty
Hopitaux Universitaires Henri Mondor

Jérôme Holtzmann
Centre Hospitalier Universitaire Grenoble Alpes
Mathilde Horn
Universite de Lille

Christophe Lancon
Aix-Marseille Universite

Marion Leboyer
Hopitaux Universitaires Henri Mondor

Pierre-Michel Llorca
Centre Hospitalier Universitaire de Clermont-Ferrand

Julia Maruani
Assistance Publique - Hopitaux de Paris

Rémi Moirand
Centre Hospitalier du Vinatier

Fanny Molière
CHU Montpellier

Jean Petrucci
Assistance Publique - Hopitaux de Paris

Raphaelle Richieri
CHU Marseille

Ludovic Samalin
Centre Hospitalier Universitaire de Clermont-Ferrand

Florian Stephan
CHRU de Brest

Guillaume Vaiva
CHU Lille

Michel Walter
CHRU de Brest

Emmanuel Haffen
Centre Hospitalier Universitaire de Besancon

Bruno Aouizerate
Centre Hospitalier Charles Perrens
Wissam El-Hage
Centre Hospitalier Regional Universitaire de Tours

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Abstract

Background: We assessed the correlation between childhood maltreatment (CM) and severity of depression in an elderly unipolar Treatment-Resistant Depression (TRD) sample.

Methods: Patients were enrolled from a longitudinal cohort (FACE-DR) of the French Network of Expert TRD Centres.

Results: Our sample included 96 patients (33% of the overall cohort) aged 60 years or above, with a mean age of 67.2 (SD = 5.7). Most of the patients were female (62.5%). The Montgomery and Asberg Depression Rating Scale (MADRS) and Quick Inventory Depression Scale-Self Report (QIDS-SR) mean scores were high, 28.2 (SD = 7.49) [MADRS score range: 0-60; moderate severity≥20, high severity≥35] and 16.5 (SD=4.94) [IDS-SR score range: 0-27; moderate severity≥11, high severity≥16], respectively. Mean self-esteem scores were 22.47 (SD=6.26) [range 0-30]. In an age and sex-adjusted model, we found a positive correlation between childhood trauma (CTQ scores) and depressive symptom severity [MADRS ($\beta$=0.274; p=0.07) and QIDS-SR ($\beta$=0.302; p=0.005) scores]. We detected a statistically significant correlation between physical abuse and depressive symptom severity [MADRS ($\beta$=0.304; p=0.03) and QIDS-SR ($\beta$=0.362; p=0.005) scores]. We did not observe any significant correlation between other types of trauma and depressive symptom severity. We showed that self-esteem (Rosenberg scale) mediated the effect of physical abuse (PA) on the intensity of depressive symptoms [MADRS: $b=0.318$, 95% BCa C.I. [0.07, 0.62]; QIDS-SR: $b=0.177$, 95% BCa C.I. [0.04, 0.37]]. Preacher & Kelly’s Kappa Squared values of 19.1% ($k^2=0.191$) and 16% ($k^2=0.16$), respectively, indicate a moderate effect.

Conclusion: To our knowledge, this is the first study conducted in a geriatric TRD population documenting an association between childhood trauma (mainly relating to PA) and the intensity of depressive symptoms.

Background

Depression is a very common disorder in the elderly, with a prevalence of up to 30% [1]. Geriatric depression is currently defined as the occurrence of depressive episodes in the elderly, although the age at onset is critical with early- (EOD; first episode before the age of 60) or late-onset depression
(LOD; first episode after the age of 60). Some differences have been reported between EOD and LOD [2–4]. For instance, personality abnormalities and a family history of psychiatric illness were significantly more common in EOD [3, 4]. However, considering the severity, phenomenology, history of previous episode, and neuropsychological performance, there is no difference between EOD and LOD in elderly people [3, 4]. Half of the elderly depressed adults report some form of childhood abuse [5]. However, childhood mistreatment is associated with the development of geriatric depression, albeit more frequently in EOD [1, 5]. There is also a link between childhood abuse and EOD in older populations [6]. In addition, the relationship between childhood maltreatment and geriatric depression (EOD or LOD) is mediated by certain personality traits. Neuroticism and extraversion seem to be more direct mediators while agreeableness and conscientiousness are rather indirect mediators [1]. However, none of these previous studies specifically examined the link between childhood trauma and treatment-resistant depression (TRD) in the context of a geriatric population. TRD is currently defined by the failure of at least two attempted antidepressant treatments administered sequentially, at adequate dose, and for an adequate duration [7]. It can be assumed that approximately 20 to 30% of depressed patients experience TRD, as reported in Anglo-Saxon countries [8], and up to one-half of patients respond only partially [7]. TRD has been estimated to represent half of the overall treatment costs for MDD [9, 10]. There are specific care for TRD in elderly population[11]. To date, there has been little investigation examining the associations between childhood adversity and TRD. Kaplan & Klinetob [12] compared the TRD population to the population that responded successfully to antidepressants. They reported greater levels of childhood emotional abuse in the TRD group. Tunnard et al. [13] focused on TRD, although unipolar and bipolar populations were mixed. They showed that childhood adversity was common among these TRD patients (62%) and was associated with poor clinical progression, characteristics of psychosis, and suicide attempts. However, to our knowledge, there was no study focusing on childhood trauma and TRD in geriatric population.

Moreover, self-esteem is associated with the clinical symptomatology and prognosis in geriatric depression. Indeed, it has been found that low self-esteem significantly increases the risk of suicidal
behaviour [14]. In addition, patients with low self-esteem respond more slowly to antidepressant treatment compared to their counterparts with higher self-esteem [15].

Thus, given the frequent history of childhood trauma in elderly depressed patients, we aim to assess the correlation between childhood maltreatment (CM) and the severity of depression specifically in an elderly TRD sample. Moreover, given the role of personality traits as well as self-esteem in the symptomatology and course of the depressive disorder, we intend to assess whether personality traits and self-esteem could influence the association between CM and the severity of depressive symptoms.

Methods
Populations: Patients were recruited for a prospective cohort (FACE-DR cohort) from the French Network of Expert Centres for Resistant Depression, consisting of 13 specialist care centre hosted within academic psychiatry departments across France [16].

Patients were clinically unresponsive to at least two successive, adequate courses of antidepressants from two different pharmacological classes corresponding to at least stage II of the staging criteria proposed by Thase & Rush for defining TRD [17]. We selected all cohort patients over 60 years of age for this study. Although the cut-off between geriatric and non-geriatric depression remains unclear, ranging from 60 [1, 6, 18, 19] to 65 years old [20, 21], we chose the age of 60 in order to compare our findings with those of most studies focusing on the impact of CM in depressive disorders [1, 6, 18, 19]. Before participating in the full assessment, patients were interviewed by a psychiatrist at the expert centre in order to:

- Confirm the diagnosis of TRD according to the DSM-IV (MINI) [22] criteria with moderate to severe symptoms, the level of resistance indicated by the classification of Thase & Rush ≥2 [17].
- Exclude bipolar disorders, psychotic disorders, obsessive-compulsive disorders, eating disorders (with BMI < 15), somatoform disorders and mood disorders related to substance abuse or misuse.
- Inform the patient about the formal assessment procedure.

Assessment: We selected patients who were 60 or over, and clinically resistant to medication as
determined by the Thase & Rush staging criteria (i.e. level II) [16, 17]. The severity of depressive symptoms, CM, self-esteem and personality traits were assessed using the Montgomery-Åsberg Depression Rating Scale (MADRS) [23], the Quick Inventory of Depressive Symptomatology Self-Report (QIDS-SR) [24], the Childhood Trauma Questionnaire (CTQ) [25], the Rosenberg scale [26] and the Big Five Inventory (BFI) [27]. The MADRS is a ten-item diagnostic questionnaire used to measure the severity of depressive episodes in patients with mood disorders. Scores range from 0 to 60 [23]. The QIDS-SR is derived from the 30-item Inventory of Depressive Symptomatology. It asks 16 questions in order to assess the severity of the nine diagnostic symptom criteria used in DSM. These nine criterion-related symptoms do not assess anxious, atypical or melancholic features or other commonly associated symptoms such as pain or gastrointestinal disturbances. Scores range from 0 to 27 [24]. The CTQ is a screening tool for histories of abuse and neglect. The self-report includes a 28-item scale that measures 5 types of maltreatment – emotional, physical and sexual abuse, and emotional and physical neglect [25]. The Rosenberg scale determines global self-worth by measuring both positive and negative feelings about oneself. Scores range from 0 to 30 [26]. The BFI is a self-report inventory designed to measure the Big Five dimensions including neuroticism, extraversion, agreeableness, openness and conscientiousness. It is a 44-item multidimensional personality inventory [27].

The assessment protocol was approved by the relevant institutional review board [French CNIL (French Data Protection Authority): DR-2015-673].

Statistical analysis: Sociodemographic and clinical characteristics were presented using means and standard deviations for continuous variables and frequency distributions for categorical variables. The chi2 test was used to compare categorical variables and the t-test and ANOVA to compare continuous variables. Linear regression models were applied to test the association between dependent variables (MADRS, QIDS-SR) and independent variables (CTQ and subtypes, BFI subtypes, Rosenberg scale). Linear regression models were adjusted for age and sex. We used the Hayes mediation model [28] in the cross-sectional study to assess the influence of one variable on the association between CM and
intensity of depressive symptoms at a specific time point. Mediation was deemed partial when indirect and direct effects were both statistically significant and considered to be complete with only the indirect effect being statistically significant. Bonferroni correction was applied for multiple comparisons (CM subtypes). Statistical analyses were performed with SPSS 25.0 (IBM Corp. Released 2017. IBM SPSS Statistics for Mac, Version 25.0. Armonk, NY: IBM Corp.).

Results

Demographic and clinical data

Our study included 96 patients (Table 1) (33% of the overall cohort) with a mean age of 67.2 [standard deviation (SD): 5.7] and mostly women (62.5%). In our sample, 82 patients (85.4%) completed the CTQ – with a mean score of 37.35 (SD: 9.69). The MADRS and QIDS-SR mean scores were high, 28.2 (SD: 7.49) [No Depression: MADRS=0-6, mild severity=7-19 moderate severity: MADRS score=20-34, high severity: MADRS score >=35 [29]] and 16.53 (SD: 4.94) [No Depression: QIDS-SR=0-5, mild severity=6-10 moderate severity: QIDS-SR score=11-15; high severity: QIDS score >=16 [30]], respectively. There was no difference in the intensity of depression symptoms on comparing the difference in terms of marital status [MADRS: married=28.4 (SD=7.2), single=25 (SD=9.41), separated=31.5 (SD=13.44), divorced=31.63 (SD=7.13), widowed=29 (SD=5.67), F=0.879, p=0.481; QIDS-SR: married=16.7 (SD=4.4), single=4.25 (SD=8.48), separated=17.5 (SD=7.78), divorced=17.6 (SD=4.53), widowed=15.33 (SD=8.62) F= 0.583, p=0.676]. A Rosenberg mean score of 22.47 (SD: 6.26) was documented. BFI scores were neuroticism [mean: 3.85 (SD: .63)], extraversion [mean: 2.37 (SD: .83)], agreeableness [mean: 4.14 (SD: .46)], openness [mean: 2.8 (SD: .86)] and conscientiousness [mean: 3.5 (SD: .75)], respectively. LOD (i.e. the first episode after 60 years of age) affected 25 patients (26%). A difference between EOD [8.66 (SD: 4.44)] and LOD [6.48 (SD: 1.54)] was noted in relation to PN (p=0.025) (Figure 1). We did not find any difference between LOD and EOD in relation to (i) other CM (table 1); (ii) the severity of depressive symptoms (MADRS scores: p=0.267; QIDS-SR scores: p=0.646) and (iii) self-esteem (Rosenberg scale scores: p=0.966) (Table 1).

Consequently, our study subjects exhibited moderate to severe depressive symptoms. Their marital
status had no impact on the intensity of depressive symptoms. Finally, more PN was found in EOD as opposed to LOD patients.

Association between Childhood Trauma and intensity of depressive symptoms

We found a significant positive correlation between CM and the intensity of depressive symptoms throughout our study sample of elderly TRD patients (Table 2.). In an adjusted model (age and gender), CTQ scores were positively associated with MADRS ($\beta=0.274; p=0.07$) and QIDS-SR ($\beta=0.302; p=0.005$) scores (Figure 2.). In relation to physical abuse (PA), we highlighted a significant correlation with MADRS ($\beta=0.304; p=0.03$) and QIDS-SR ($\beta=0.362; p=0.005$) scores (Figure 3.). We did not, however, detect any significant correlations between others types of trauma and the intensity of depressive symptoms (Table 2.). A correlation between childhood maltreatment, mainly physical abuse, and intensity of depressive symptoms was documented.

Influence of personality traits on the association between Childhood Trauma and intensity of depressive symptoms

We found no significant correlation between CM and personality traits, namely neuroticism ($\beta=0.223; p=0.07$), extraversion ($\beta=-0.191; p=0.13$), agreeableness ($\beta=0.052; p=0.68$), openness ($\beta=-0.058; p=0.63$) and conscientiousness ($\beta=-0.204; p=0.11$). We found no significant associations between distinct subtypes of CM and personality traits: neuroticism (EA, PA, SA, EN, PN), extraversion (EA, PA, SA, EN, PN), agreeableness (EA, PA, SA, EN, PN), openness (EA, PA, SA, EN, PN) and conscientiousness (EA, PA, SA, EN, PN).

Influence of self-esteem on the correlation between Childhood Trauma and intensity of depressive symptoms

In an adjusted model, we found a negative correlation between CM (CTQ total) and self-esteem ($\beta=-0.25; p=0.036$), specifically in cases reporting PA ($\beta=-0.32; p=0.04$) (Table 3.). Our objective was
to assess the potential role of self-esteem on the correlation between CM (mainly PA subtype) and intensity of depression. We therefore had to consider a potential correlation between self-esteem and (i) CM mainly PA and (ii) intensity of depression. The correlation between PA and self-esteem levels (Rosenberg score) was significant ($\beta = -0.472$, $p<0.01$). Self-esteem levels (Rosenberg score) were associated with the intensity of depression symptoms (MADRS: $\beta = -0.675$, $p<0.001$; QIDS: $\beta = -0.375$, $p<0.001$). Therefore, we looked at a potential mediator effect of self-esteem on the correlation between PA and intensity of depression (Hayes’ model). We showed that self-esteem (Rosenberg scale) significantly mediated the effect of PA on the severity of depressive symptoms: MADRS: $b = 0.318$, 95% BCa CI [0.07, 0.62]; QIDS-SR: $b = 0.177$, 95% BCa CI [0.04, 0.37]. Preacher & Kelly’s Kappa Squared values of 19.1% ($k^2 = 0.191$) and 16% ($k^2 = 0.16$), respectively, were documented indicating a moderate effect of the mediation (Figure 4). The mediation indices were found to be 0.182 [95% CI: 0.042; 0.338] for MADRS and 0.148 [95% CI: 0.031; 0.292] for QIDS-SR respectively. Therefore, self-esteem had a moderate total mediation effect. The indirect effect of PA on depressive symptom intensity was significant (MADRS: $\beta = 0.318$, 95%CI [0.07; 0.624], QIDS: $\beta = 0.177$: 95%CI [0.036; 0.377]). The direct effect of PA on depression symptom severity was a positive correlation but insignificant on the basis of MADRS ($\beta = 0.263$, $p = 0.132$). However, the correlation was both positive and significant focusing on QIDS-SR ($\beta = 0.285$, $p < 0.05$). The full model effect of PA on intensity of depression symptoms was significant (MADRS: $\beta = 0.582$, $p<0.01$; QIDS: $\beta = 0.463$, $p<0.001$) (Figure 4). Self-esteem appeared to mediate the association between PA in childhood and depression symptom severity.

Discussion
To our knowledge, this is the first study in a geriatric TRD population to document a association between CM, specifically relating to PA and the intensity of depressive symptoms using either self- or hetero evaluations. It seems that self-esteem mediate this association between PA in childhood and depression symptom severity.

To our knowledge, Tunnard et al. [13] was the only study to focus on the correlation between CM and TRD. However, this study was not conducted in the area of geriatric depression as the recruited
population was particularly heterogeneous and included both unipolar and bipolar patients. They reported that CM is common, affecting up to 62% of TRD patients. However, they failed to show any significant correlation between childhood trauma and clinical severity.

Self-esteem is associated with geriatric depression symptoms [14] and prognosis [15]. Moreover, numerous studies have documented a strong positive correlation between maltreatment and low self-esteem [31–33]. This correlation could be explained by the fact that early maltreatment can negatively affect the cognitive, social and emotional development of child. In addition, it is well-established that low self-esteem and depression are closely linked [31–33]. Finally, self-esteem was found to peak in people in their fifties or sixties before decreasing dramatically thereafter. Two explanations for this decline have been put forward [34, 35]. The first refers to losing things associated with self-esteem (i.e. socioeconomic positions or social roles due to retirement, abilities such as physical and cognitive performances, etc.). The second relates to profound changes in attitudes toward oneself (elderly people tend to accept their limitations as they get older, which leads them to take a more modest view of themselves.). Because of the known correlations between self-esteem and (i) CM and (ii) depression, as well as diminished self-esteem from the age of 60, we endeavoured to assess the potential impact of self-esteem on the correlation between CM (mainly PA subtype) and the intensity of depression. We found that self-esteem could influence this effect (complete mediation with MADRS and partial mediation with QIDS-SR). Our findings suggest that low self-esteem is an important factor in geriatric depression especially in individuals with a previous history of physical abuse. In contrast to previously published studies [1, 5, 6], we found no significant correlation with personality traits, while our work focused specifically on TRD in the geriatric population. Our study sample was selected from highly specialised care centres in contrast to other published studies which focused on samples identified in the general population [1, 5, 6]. There were some limitations. Firstly, our sample was smaller than that of other studies carried out in geriatric populations [1, 5, 6]. This could account for the lack of correlation between personality traits and CM. Moreover, we did not compare our results to a control group of depressed patients with no resistance to treatment, in order to assess whether mediation through self-esteem is closely related to TRD. In
addition to this, the cut-off age we used for geriatric depression was relatively young (60 years of age and above). However, this cut-off is the same as that used in other studies [1, 5, 6]. In addition, the diagnosis of EOD and LOD was determined retrospectively. This may introduce a bias and may explain the lack of data in relation to the first major depressive episode. There could also be a recall bias regarding CTQ. Indeed, recall bias, or greater likelihood of reporting exposure in participants with MDD, has been highlighted (probably linked to negative bias in autobiographical memory) [36]. Moreover, the mediation analysis should be interpreted with caution given the fact that this was a cross-sectional study. Finally, the involvement of other factors such as cognitive decline and traumatic events occurring in adulthood, which could be linked to the intensity of depressive symptoms, at least in part, would require further investigation in future research involving geriatric TRD populations. Despite the need for future studies to confirm our findings, it seems important to take the mediation effect of self-esteem into account in routine clinical practice. Indeed, relevant data indicate the positive effect of psychotherapy, such as cognitive-behavioural therapy (CBT), on low self-esteem [37–41]. Therefore, CBT focused on self-esteem could be particularly useful for the management of TRD, especially in patients with early negative life experiences. In fact, given that higher self-esteem is significantly correlated with better treatment outcomes, increased self-esteem could improve the medical care outcome [42, 43].

Conclusions
We highlighted a correlation between childhood trauma (mainly relating to PA) and the intensity of depressive symptoms in a geriatric TRD population. Our findings must be confirmed in well-designed prospective studies involving larger pathological populations. However, these results underpin the potential relevance of CBT predominantly focused on self-esteem as add-on treatment in the management of TRD in geriatric populations, especially in cases reporting CM.

Abbreviations
BFI: Big Five Inventory
BMI: Body Mass Index
Declarations

**Ethics approval and consent to participate**

The authors hereby confirm that all work-related procedures comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. The assessment protocol was approved by the relevant institutional review board [French CNIL (French Data Protection Authority): DR-2015-673]. The consent obtained from study participants was written and verbal.

**Consent for publication**
Availability of data and materials

To get available data, please contact correspondant author: antoineyrondi@gmail.com

Competing interests

Antoine Yrondi received speaker's honoraria (AstraZeneca, Janssen, Lundbeck, Otsuka, Servier), and carried out clinical studies in relation to the development of a medicine (Janssen, Lundbeck) unrelated to this work.

Christophe Arbus received honoraria (Janssen, Lundbeck, Otsuka) and carried out clinical studies in relation to the development of a medicine (Janssen).

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Guillaume Vaiva received speaker's honoraria from Otsula/Lundbeck (Annual participation at the reception day for new professors of psychiatry).

Emmanuel Haffen: acted in an advisory capacity, carried out clinical studies in relation to the development of a medicine, received personal research, study or travel allowances, gave presentations at meetings, and received remuneration for input from the following pharmaceutical organisations: AstraZeneca, BMS, Cellgene, Euthérapie - Servier, Janssen, Elli Lilly, Lundbeck, LivaNova, Otsuka, Pfizer and Sanofi. He also held a managerial position at the FondaMental Foundation (Créteil) and the French Association of Biological Psychiatry and Neuropsychopharmacology.
Wissam El-Hage has received speaker's honoraria from Chugai, Eisai, Lundbeck, Janssen-Cilag, Otsuka, and UCB unrelated to this work.

Bruno Aouizerate received speaker's honoraria and a travel allowance from Lundbeck, Janssen-Cilag, and Eli Lilly. He has served on the advisory board of Janssen-Cilag.

Thierry d’Amato, Franck Bellivier, Djamila Bennabi, Thierry Bougerol, Vincent Camus, Philippe Courtet, Jérôme Holtzmann, Christophe Lançon, Marion Leboyer, Pierre Michel Llorca, Julia Maruani, Fanny Molière, Michel Walter and Jean Petrucci have no conflicts of interest to declare.

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All authors have approved the manuscript.

**Author’s contributions:**

All authors were involved in patient selection and enrolment, clinical assessment and drafting of this paper.

AY, CA, DB, EH, WEH and BA were also involved in choosing the data set for this project and the statistical analysis.

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FondaMental Advanced Centres of Expertise (FACE-DR) collaborators

List of FondaMental Advanced Centres of Expertise (FACE-DR) collaborators: FACE-DR Clinical Coordinating Centre (Fondation FondaMental); B. Aouizerate, D. Bennabi, M. Leboyer, E. Haffen and PM Llorca; FACE-DR Data Coordinating Centre (Fondation FondaMental): V. Barteau, S. Bensalem, H.
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Service de Psychiatrie et de Psychologie Médicale de l’adulte , Centre Expert Dépression Résistante FonDaMental, CHRU de Toulouse, Hôpital Purpan, Toulouse, France: A. Yrondi, D Pierre, L Schmitt and M. Sarrail; Service de Psychiatrie clinique, Centre Expert Dépression Résistante FonDaMental, EA 481 Neurosciences, Université de Bourgogne Franche Comté, Besançon, France: E. Haffen, Djamila Bennabi, I. Ryff, E. Beuchet, G. Tio, C. Cappe and E. Clerc; Service de Psychiatrie de l’adulte B, Centre Expert Dépression Résistante FonDaMental, CHU de Clermont-Ferrand, Clermont-Ferrand, France: PM. Llorca, M. Garnier, RM Honciuc, E Allauze and O. Blanc ; Service de Psychiatrie adulte, Centre Expert Dépression Résistante FonDaMental, Hôpital Fernand-Widal, Paris, France: F. Bellivier, N. Allaili, I. Nieto, J. Meheust, Y. Sonthavy and J. Maruani; Service de Psychiatrie de l’adulte, CS 10217, Centre Expert Dépression Résistante FonDaMental, CHU de Grenoble, Hôpital Nord, Grenoble, France: T. Bougerol, M. Polosan, P. Courvoisier, J. Holtzmann, B. Fredembach and S. Foubert-Andreani; Clinique Psychiatrique Universitaire (University Psychiatric Clinic), Centre Expert Dépression Résistante FonDaMental, Inserm U1253 Imaging and Brain: iBrain, CHRU de Tours, Tours, France: V. Camus and W. El Hage; Service Universitaire de Psychiatrie adulte, Centre Expert Dépression Résistante FonDaMental, Centre Hospitalier Le Vinatier, Bron cedex, France: T. D’Amato, F. Haesebaert, C. Dubien, M. Lefebvre, A. Meznad, J. Brunelin and R. Moirand; Pôle de Psychiatrie Générale et Universitaire, Centre Expert Dépression Résistante FonDaMental, CH Charles Perrens, Bordeaux, France: B. Aouizerate and O. Doumy; Pôle Psychiatrie, Centre Expert Dépression Résistante FonDaMental, CHU La Conception, Marseille, France: C. Lancon, R. Richieri, P. Peri, M. Faugere and C. Faget-Agius; Département des Urgences et Post-Urgences Psychiatriques (Psychiatric Emergency and Post-Emergency Department), Centre Expert Dépression Résistante FonDaMental, CHRU Lapeyronie, Montpellier, France: P. Courtet, JP. Boulenger and F. Moliere; Service de Psychiatrie de l’adulte, Centre Expert Dépression Résistante FonDaMental, CHU de Brest, Hôpital de Bohars, Bohars, France: F. Stephan, M. Walter and C. Mesmeur; Service de Psychiatrie adulte, Centre Expert Dépression
Résistante FondaMental, CHRU de Lille, Hôpital Fontan 1, Lille, France: G. Vaiva, and M Horn.

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Tables
Table 1. Population characteristics.
### General population

|                            | N  | Min. | Max. | Mean (SD) | N  |
|---------------------------|----|------|------|-----------|----|
| AGE, years                | 96 | 60   | 84   | 67.25 (5.67) | 50 (52.1%) |
| Female(%)                 | 60 (62.5%) |      |      |           | 34 |
| Marital status (%)        |    |      |      |           |    |
| Single                    | 8 (8.3%) |      |      |           | 7  |
| Married                   | 62 (64.6%) |     |      |           | 27 |
| Separated                 | 2 (2.1%) |      |      |           | 2  |
| Divorced                  | 10 (10.4%) |    |      |           | 8  |
| Widowed                   | 3 (3.1%) |      |      |           | 0  |
| Educational level         |    |      |      |           |    |
| Elementary school degree  | 23 (23.8%) |     |      |           | 10 |
| High school degree        | 11 (11.5%) |    |      |           | 4  |
| Youth training (National  | 7 (7.3%) |      |      |           | 3  |
| Vocational Qualification Level 1, 2) | | | | | |
| Business and Technology   | 10 (10.4%) |   |      |           | 4  |
| Education Council first diploma | | | | | |
| High school degree+1      | 3 (3.1%) |      |      |           | 3  |
| High school degree+2      | 9 (9.4%) |      |      |           | 7  |
| High school degree+3      | 6 (6.3%) |      |      |           | 2  |
| High school degree+4      | 4 (4.2%) |      |      |           | 4  |
| High school degree+5      | 5 (5.2%) |      |      |           | 3  |
| Doctoral Degree           | 6 (6.3%) |      |      |           | 4  |
| LOD                       | 25 (26%) |      |      |           |    |
| MADRS score M0            | 92 | 8    | 44   | 28.2 (7.49) | 47 |
| QIDS-SR M0                | 89 | 1    | 26   | 16.53 (4.94) | 47 |
| Rosemberg score M0        | 79 | 10   | 36   | 22.47 (6.26) | 39 |
| BFI extraversion          | 78 | 1    | 4.25 | 2.37 (.83) | 41 |
| BFI agreeableness         | 78 | 3.20 | 5    | 4.14 (.46) | 41 |
| BFI neuroticism           | 73 | 2    | 5    | 3.85 (.63) | 40 |
| BFI conscientiousness     | 73 | 1.22 | 4.89 | 3.5 (.75) | 40 |
### Table 2. Association between the intensity of depressive disorder and childhood trauma at baseline.

|                      | Unadjusted |          |          |          |          |
|----------------------|------------|----------|----------|----------|----------|
|                      | **β**      | **p-value** |
| MADRS, score         |            |          |          |          |          |
| CTQ, total score     | 0.3        | 0.04     |
| Emotional abuse, score | 0.049    | 0.999    |
| Physical abuse, score | 0.328     | 0.02     |
| Sexual abuse, score  | 0.263      | 0.09     |
| Emotional neglect, score | 0.176   | 0.59     |
| Physical neglect, score | 0.113    | 0.999    |
| QIDS, score          |            |          |          |          |          |
| CTQ, total score     | 0.338      | 0.002    |
| Emotional abuse, score | 0.105    | 0.999    |
| Physical abuse, score | 0.392     | 0.002    |
| Sexual abuse, score  | 0.199      | 0.37     |
| Emotional neglect, score | -0.037  | 0.999    |
| Physical neglect, score | 0.293    | 0.04     |

CTQ: Child Trauma Questionnaire; MADRS: Montgomery-Åsberg Depression Rating Scale; QIDS: Quick Inventory of Depres.

BFI: Big Five Inventory; \(^C\): Chi2 test; CTQ: Childhood Trauma Inventory; EOD: Early On Set Depression; LOD: Late On Set Depression; M0: Month 0; MADRS: Montgomery-Åsberg Depression Rating Scale; Max.: Maximum; Min.: Minimum; N: Number; QIDS-SR: Quick Inventory Depression Scale-Self Rated; SD: Standard Deviation; \(^t\): t-test
Table 3. Association between self-esteem and childhood trauma at baseline.

|                          | Unadjusted |   β  |
|--------------------------|------------|------|
| Rosenberg, score         | CTQ, total score | -0.25 |
| Emotional abuse, score   |             | 0.11 |
| Physical abuse, score    |             | -0.31 |
| Sexual abuse, score      |             | -0.27 |
| Emotional neglect, score |             | -0.06 |
| Physical neglect, score  |             | -0.12 |

CTQ: Child Trauma Questionnaire; MADRS: Montgomery-Åsberg Depression Rating Scale; QIDS: Quick Inventory of Depressive Symptomatology; STAI: State-Trait Anxiety Inventory; Bonferroni corrections.

Figures

![Bar graph showing difference of Physical Neglect between patients with Early Onset Depression (EOD) and Late Onset Depression (LOD)](image)

**Figure 1**

Difference of Physical Neglect between patients with Early Onset Depression (EOD) and Late Onset Depression (LOD)
Figure 2

Association between Childhood trauma and intensity of self-reported depressive symptoms
Figure 3

Association between Physical Abuse and intensity of depressive symptoms (A: QIDS-SR; B: MADRS)
Figure 4

Self-esteem as mediator of Physical Abuse on intensity of depressive symptoms: A : MADRS

; B : QIDS