Positive and negative life events and reasons for living modulate suicidal ideation in a sample of patients with history of suicide attempts

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ABSTRACT

Background: The influence of life events on suicidal behavior remains inconclusive, while reasons for living (RFL) may be protective.
Objectives: To analyze the association between positive and negative life events and suicidal ideation (SI) and the interaction between life events and RFL on SI.
Method: Patients with history of suicide attempts (n = 338) underwent a comprehensive clinical evaluation, including SI (Beck's Suicidal Ideation scale), RFL (Reasons for Living Inventory, RFLI) and life events (family, school, student or professional, social, health and religion-related and other life events) during the last twelve months.
Results: The only negative life events associated with SI were health-related events (OR = 2.01 95%CI [1.04;3.92]). Family-related positive life events and RFL were negatively associated with SI (OR = 0.73 95%CI[0.58;0.91] and OR = 0.98 95%CI[0.97;0.98], respectively). No significant interaction between the number of positive life events and RFLI total score with current SI (p = 0.57) was detected. Family-related positive life events and RFL did not have any additive effect on SI. Positive life events did not moderate the association between health-related negative life events and SI.
Limitations: This was a retrospective study, the presence of axis II disorders was not investigated and results cannot be generalized due to the sample choice (only suicide attempters).
Conclusions: Patients with history of suicide attempts could be less sensitive to negative life events, except for those related to health. Clinicians should pay more attention to somatic problems in patients at risk of suicide. Family support, positive psychology and therapies that strengthen RFL should be developed to prevent suicide.

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1. Introduction

Suicide is a major public health issue. Nearly one million people die due to suicide every year. Moreover, it is generally under-reported because suicide by car accident may be recorded as accidental death (more than 2% of the current traffic accidents) (Pompili et al., 2012). Evidence supports the hypothesis that recent (i.e., in the last 6—12 months) negative life events (NLE) may act as

triggers of suicidal behavior (Liu and Miller, 2014). Many studies suggest that NLE may increase the risk of suicidal ideation (SI) (Casey et al., 2006), suicide attempt (SA) (Blasco-Fontecilla et al., 2010) and completed suicide (Vijayakumar and Rajkumar, 1999; Khan et al., 2008; Zhang et al., 2004, 2010), independently of psychiatric and personality disorders (Wang et al., 2015; Cheng et al., 2000; Li et al., 2008; Turvey et al., 2002; Wan and Leung, 2010; Yen et al., 2005). However, some findings suggest that not only life events, but a combination of several factors that contribute to SI can initiate a suicidal process (Rich and Bonner, 1987; Joiner and Rudd, 1995) or acts (Kelly et al., 2000). According to the stress-diathesis model of suicidal behavior (Mann et al., 1999; Oquendo et al., 2004), suicide might be the result of the interaction between environmental stressors or psychiatric disorders and trait-dependent vulnerability to suicidal behavior. Particularly, studies on the vulnerability stress model suggest that psychological pain, pessimism, impulsivity and early trauma may predispose to suicidal behavior by influencing the ability to cope with NLE (Olié et al., 2010; Jorge Lopez-Castroman et al., 2014a).

For instance, it has been demonstrated that suicide acceptance increases significantly the probability of planning suicide among people who experience hopelessness (Joe et al., 2007). Several studies have stressed that besides NLE, psychiatric disorders also may play a major and possibly greater role in increasing suicide risk (Abreu et al., 2009; Oquendo et al., 2004; Goldney et al., 2000). However, it was recently reported that this is true in men but not in women and that, consequently, NLE are an independent risk factor for suicidal ideation and behavior only in women (Park et al., 2015). Moreover, some studies did not find a consistent link between NLE and SA (De Vanna et al., 1990). In addition, little is known about protective factors because few studies focused on them and results were not conclusive (Liu and Miller, 2014). The Reasons For Living Inventory (RFLI) has been developed to identify protective factors against suicide (Linehan et al., 1983). Reasons for living (RFL) are reasons that an individual may consider important for "staying alive" and "not killing himself/herself". Linehan et al. postulated that having many RFL could act as a protective factor against suicide. Data on the protective role of positive life events (PLE) also are scarce. It has been proposed that PLE and social support, which is a potential protective factor, might modulate SI and act synergistically to buffer NLE effect on SI (Kleiman et al., 2014). Similarly, resilience factors (i.e., potential protective factors against suicide) could interact together to reduce the risk of suicide.

In this study, we investigated the association between positive and negative life events and current SI in a sample of patients with history of SA. We focused on this specific population because individuals with history of SA are at very high risk of suicide. Moreover, this risk is proportionally higher in the case of recent suicide attempt (Carroll et al., 2014). We hypothesized that: (1) NLE increase SI occurrence; (2) PLE and RFL are protective against SI appearance; and (3) RFL and PLE have a synergistic protective effect against SI (i.e., the combined effect of RFL and PLE is higher than the sum of the effects of each of these variables). By performing a comprehensive assessment of the environmental factors that may modulate SI, we wanted to collect useful information for developing specific patient-centered psychosocial interventions.

2. Methods

2.1. Participants

For this study, hospitalized patients with history of SA were consecutively recruited at the Adult Psychiatry Departments of Montpellier University Hospital Center (Lapeyronie Hospital), Créteil University Hospital Center (H. Mondor and A. Chenevier Hospitals) and Nancy University Hospital Center (Jeanne d'Arc Hospital, Toul), France. All patients had a lifetime history of SA, but hospitalization at the time of inclusion was not necessarily due to a SA. A SA was defined as a self-destructive act with some degree of intent to end one's life (according to the definition given by Mann et al., 1999). This is different from self-harm and requires medical evaluation or treatment. Patients were enrolled if they were older than 18 years of age, French speaking and with all four biological grandparents originating from Western European countries (for genetic studies). Exclusion criteria were: pregnancy, breast-feeding, patients involved in another research protocol or for whom the maximum annual payments (3800€) for participation in clinical studies was reached, minors, patients not affiliated to a French social security system, legally protected individuals, patients deprived of freedom by judicial or administrative decision, or absence of informed consent to participate in the study. After having received information about the study purpose and method, patients signed an informed consent form. The study was approved by the local Ethics Committee (CPP Sud Méditerranée IV, CHU Montpellier). In total, 338 patients with available data on life events, SI and RFL were included in this study.

2.2. Assessment

Clinical assessments by trained psychiatrists included a full medical examination as well as evaluation of impulsivity, SI, hopelessness, RFL, life events, personal or familial history of suicidal behavior and history of childhood maltreatment. The validated French version of the Mini International Neuropsychiatric Interview was used to identify Axis I-DSM IV disorders (Sheehan et al., 1998). Depression was assessed with the French version of the Beck Depression Inventory (BDI) (Beck et al., 1961; Collet and Cottraux, 1986). Participants completed the following self-report questionnaires:

- the 10th version of the Barratt Impulsiveness Scale (BIS-10) (Barratt, 1965; Baylé et al., 2000). This is a widely used and validated 34-item and 4-point Likert scale with documented internal consistency (Patton et al., 1995). High scores indicate high level of impulsivity.
- the 19-item Beck's Suicidal Ideation scale (SSI) (Beck et al., 1979). Scores for each item range from 0 to 2 and the total score from 0 to 38. High scores are correlated with high SI levels. The cut-off of 2 is considered as the best to distinguish between suicidal and non-suicidal subjects (de Beurs et al., 2015). This scale is widely used by clinicians to assess suicidal thoughts and to follow the patient's response to treatment. Its reliability and validity have been documented. This scale was used to measure SI at the time of inclusion in the study.
- the Beck Hopelessness Scale (BHS). This widely used, 20-item self-report questionnaire has been designed to measure "three major aspects of hopelessness: feelings about the future, loss of motivation and loss of expectations" (Kattimani et al., 2015). It is highly reliable and has been validated (Beck et al., 1974).
- the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 1994). The CTQ is used to identify retrospectively five types of childhood maltreatment (physical abuse, emotional abuse, sexual abuse, physical neglect and emotional neglect) that are categorized as none, low, moderate or severe.
- the Reasons for Living Inventory (RFLI) (Linehan et al., 1983). RFLI is a validated instrument to assess reasons that a person considers important for not killing himself/herself. It is a 48-item, 6-point Likert scale with six subscales: Survival and Coping Beliefs (SCB), Moral Objections to Suicide (MOS),