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Research paper

Differences and similarities of risk factors for suicidal ideation and attempts among patients with depressive or bipolar disorders

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ABSTRACT

Background: Substantial literature exists on risk factors for suicidal behaviour. However, their comparative strength, independence and specificity for either suicidal ideation or suicide attempt(s) remain unclear.

Methods: The Helsinki University Psychiatric Consortium (HUPC) Study surveyed 287 psychiatric care patients with ICD-10-DCR depressive or bipolar disorders about lifetime suicidal behaviour, developmental history and attachment style, personality and psychological traits, current and lifetime symptom profiles, and life events. Psychiatric records were used to confirm diagnosis and complement information on suicide attempts. Multinomial regression models predicting lifetime suicidal ideation and single or repeated suicide attempts were generated.

Results: Overall, 21.6% patients had no lifetime suicidal behaviour, 33.8% had lifetime suicide ideation without attempts, and 17.1% had a single and 27.5% repeated suicide attempts. In univariate analyses, lifetime suicidal behaviour was associated with numerous factors. In multivariate models, suicidal ideation was independently predicted by younger age, severe depressive disorder, bipolar disorder type II/nos, hopelessness, and childhood physical abuse. Repeated suicide attempts were independently predicted by younger age, female sex, severe depressive disorder with or without psychotic symptoms, bipolar disorder type II/nos, alcohol use disorder, borderline personality disorder traits, and childhood physical abuse.

Limitations: Cross-sectional and retrospective study design, utilization of clinical diagnoses, and relatively low response rate.

Conclusions: Risk factors for suicidal ideation and attempts may diverge both qualitatively and in terms of dose response. When effects of risk factors from multiple domains are concurrently examined, proximal clinical characteristics remain the most robust. All risk factors cluster into the group of repeated attempters.

1. Introduction

Nearly a million people worldwide die annually by suicide, and suicide prevention is among the primary global and public health objectives (World Health Organization, 2014). Central risk factors for suicide are a previous suicide attempt (Gonda et al., 2012; Hawton et al., 2013) and mood disorders (Arsenault-Lapierre et al., 2004; Cavanagh et al., 2003). Although mood episodes, suicidal ideation, and suicide attempts are major indicators of risk, numerous other factors likely also have an influence (Isometsa, 2014). Psychological factors, including hopelessness, impulsivity, and other personality traits (O'Connor and Nock, 2014), and adult and childhood negative life events (Norman et al., 2012; Van Orden et al., 2010) presumably affect the diathesis of suicidal behaviour (Mann, 2003). Relatively few clinical studies have examined various putative and clinical risk factors concurrently.

For research on suicidal behaviour in mood disorders, a common limitation is non-segregation of risk factors for suicidal ideation and attempts (Sokero et al., 2003). Because both share common risk factors, study designs should allow differentiating

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risk factors for each. In large-scale epidemiological studies with such design (Nock et al., 2008a; 2009; Nock et al., 2010), mood disorders are substantial predictors for suicidal ideation, but do not appear to well explain transition from ideation to suicidal acts. Instead, characteristics associated with anxiety and impaired impulse control appear important for suicide attempts. In epidemiological studies, however, the severity or course of disorders are not accurately measured and accounted for in the analyses. Since of all suicide deaths half die by the first lifetime attempt (Isometsa and Lonnqvist, 1998), the evaluation of risk factors for both suicide ideation and attempts will aid in identifying those at suicide risk and may clarify underlying factors that contribute to suicide deaths.

Systematic reviews of risk factors for suicide attempts and deaths highlight the significance of proximal clinical risk factors, such as severity of depressive symptomatology and co-morbidity, including anxiety disorders, cluster B traits, and substance abuse (Chesney et al., 2014; Hawton et al., 2013, 2005; Oquendo et al., 2006; Schaffer et al., 2015b). These factors, however, are less often concurrently investigated with other putative risk factors within a single study design. Most of all, studies including some but not all of these risk factors may be susceptible to confounded associations. Further, such studies are unable to investigate thoroughly the independence of effects or to weight the relative importance of early adverse experiences and trait- and state-related proximal or distal risk factors. Therefore, comprehensive study designs that cover multiple domains of risk factors and apply multivariate analyses are called for in order to address these methodological challenges (Brezo et al., 2006; Maniglio, 2011; Norman et al., 2012; Oquendo et al., 2006; Schaffer et al., 2015a).

Risk of suicide attempt is known to vary considerably with severity of depressive syndromes (Holma et al., 2014; 2010; Sokero et al., 2005). Similarly, retrospectively evaluated worst lifetime suicide ideation (Beck et al., 1999) and worst-point more active suicidal thoughts among contemporary ideators within the same sample (Joiner et al., 2003) appear to both be strong predictors of subsequent suicide completion, and the latter also for past suicide attempts. To our knowledge, no previous study has evaluated retrospectively self-rated worst depressive or anxiety symptoms and risk for suicidal behaviour.

The aims of this study are (1) concurrent examination of numerous potential risk factors from multiple domains for suicidal behaviour, including childhood adverse experiences, personality traits, and clinical diagnostic and symptomatic characteristics, for suicidal behaviour in depressive and bipolar disorder within one sample. We also explore lifetime worst depressive and anxiety symptom scores, reported retrospectively, as risk factors. Furthermore, we (2) investigate differences between risk factors for suicidal ideation and single or repeated suicide attempts. We hypothesize (a) an increasing intensity of risk factors along a continuum of suicidal behaviour as a marker for dose-response relationships, and (b) factors associated with impaired self-control, e.g. borderline personality traits and substance use, to cluster among the group of repeat attempters.

2. Methods

2.1. Setting

The Helsinki University Psychiatric Consortium (HUPC) Study is a collaborative research project between The Faculty of Medicine, University of Helsinki; the Department of Health and the Mental Health Unit of the National Institute of Health and Welfare, Helsinki; the Department of Social Services and Health Care, Psychiatric Services, City of Helsinki; and the Department of Psychiatry, Helsinki University Central Hospital, Helsinki, Finland. The catchment area (mean population 1 139 222 in 2012) encompasses the Helsinki metropolitan area, including the cities of Helsinki, Espoo, Vantaa, Kauniainen, Kerava, and Kirkkonummi, where free-of-charge psychiatric secondary care services are provided to the residents of the area. The study was carried out in all 10 communal mental health centres, each corresponding to specific areas, in 24 of the 35 psychiatric inpatient wards, in one of the 8 day-care hospitals, and in two residential communities. Participants were requested to fill in a web browser-based survey by specific notebooks via mobile access. An option for a paper-and-pencil version of the survey was provided. The Ethics Committee of Helsinki University Central Hospital approved in 2010 the study design reported for the first time in detail here.

2.2. Sampling procedure

The HUPC project aimed at establishing a representative cohort of patients suffering from a mood or psychotic disorder in psychiatric care within the area. This study report is based on the mood disorder part of the project and includes patients with depressive disorder or bipolar disorder. Other main diagnoses, such as anxiety or eating disorders, which may occasionally occur in mood disorder units, are excluded.

To accomplish representativeness, patients were sampled according to the resident population (half from the Helsinki City Department of Social Services and Health Care, Psychiatric Services; half from the Helsinki University Central Hospital Psychiatric Department) and drawn by stratified sampling method in regional units (omitting tertiary care units). During the sampling process (12 January 2011–20 December 2012) patients were randomly drawn by either identifying all eligible patients on a certain day or week in a unit or by randomly selecting from patient lists. Within hospital settings, every fifth non-involuntary entry was identified. All $\geq$ 18-year-old patients were considered eligible. The few exclusion criteria were mental retardation, neurodegenerative disorders, and insufficient Finnish language skills. Each identified patient was fully informed of the study, and the volunteers gave written informed consent.

2.3. The sample

Since the research project primarily aimed at detailed analyses of mood disorder patients, sampling was enriched within this group during a later period. In addition, the sampling procedure was not completely adhered to within a few participating units. Of the 904 patients drawn from mood disorder units, 784 were invited to participate, with 375 declining and 409 consenting. Due to limited data collecting resources, 74 patients were lost, and 336 patients eventually completed the survey, resulting in a response rate of 43% (336/784). The sampling procedure is illustrated in detail in Fig. 1.

After exclusion of other principal lifetime diagnoses and missing surveys due to human or technical errors owing to mobile access, the final study sample presented herein consists of 287 patients with either depressive disorder or bipolar disorder. Of the sample, nearly three-fourths were female and the mean age was 39.9 years. Slightly over one-third were married or cohabiting, and one-third reported no professional education. Less than one in five had a university-level education. More than one-fourth were employed or studying, and two-thirds reported lifetime smoking. The sociodemographic characteristics of the sample are presented in Table 1.

Because of the lower-than-expected response rate, we investigated risk of selection biases. We compared the cohort with the entire patient population in treatment within the services in