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Original article

Method of assessment determines prevalence of suicidal ideation among patients with depression

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ABSTRACT

Background: How different ways of assessing suicidal ideation influence its prevalence, correlates and predictive validity among patients with major depressive disorder (MDD) remains unclear.
Methods: Within the Vantaa Primary Care Depression Study (PC-VDS, 91 patients) and the Vantaa Depression Study (VDS, 153 psychiatric out-and 41 inpatients), suicidal ideation was assessed with the Scale for Suicidal Ideation (SSI), Hamilton Depression Scale (HAM-D) item 3 and Beck Depression Inventory (BDI) item 9, and by asking whether patients had seriously considered suicide during the episode. The positive and negative predictive values (PPV, NPV) for suicide attempts during a six-month follow-up were investigated.
Results: Depending on the setting, 56–88% of patients had suicidal ideation in some of the assessments, but only 8–44% in all of them. Agreement ranged from negligible to moderate (kappa 0.06–0.64), being lowest among primary care patients. The correlates of suicidal ideation overlapped. No assessment had optimal sensitivity, specificity, PPV and NPV. Nevertheless, PPVs ranged up to 43%.
Conclusions: Which MDD patient is classified as having suicidal ideation depends strongly on the method of assessment, with the greatest variation likely in primary care. Differences in assessments may cause inconsistency in risk factors. Predicting suicide attempts is difficult, but not futile.

1. Introduction

Completed suicide is a major risk among psychiatric patients with major depressive disorder (MDD); 7% of male and 4% of female MDD patients die by suicide [19]. Suicide risk assessment is therefore a priority in depression treatment. Previous attempts are a robust indicator of risk [19]; however, about half of suicide completers die in their first suicide attempt [11]. Suicide completers with MDD have usually communicated their intentions [10] and as suicidal ideation also indicates risk for future suicidal acts [4,8,14,15,24], evaluating suicidal ideation is an integral part of suicide risk assessment. The reported prevalence estimates of suicidal ideation among MDD patients are, however, highly inconsistent, ranging from 11% to 63% [18,31]. The degree to which this variation is caused by true differences between populations or by methodological factors remains obscure.

According to recent studies, prevalence of suicidal ideation among patients with mood disorders may strongly depend on the assessment methods applied [18,27]. Due to inconsistent assessments of suicidal ideation and behaviour, the Columbia Classification Algorithm of Suicide Assessment (C-CASA) [21] is now mandatory in clinical trials of central nervous system active drugs [17]. The content of C-CASA is reflected in the recently introduced Columbia Suicide Severity Rating Scale (C-SSRS) [20]. Other scales of suicidal ideation, such as the Scale for Suicide Ideation (SSI) [2], have been used in research [14,24,29], but rarely in clinical practice. Commonly used simple methods include individual suicidality items from depression symptom scales, such as the Quick Inventory of Depressive Symptomatology – Clinician-rated item 12 [18,22,32], HAM-D item 3[7], BDI item 9 and Inventory of Depressive Symptomatology – Clinician-rated suicide item 2 [5]. The varying emphasis in all of these assessments is likely to affect the consistency of the estimated prevalence and observed risk factors of suicidal ideation. The assessments may have an emphasis on the duration, frequency, depth, intensity or persistence of suicidal thoughts and plans. The assessments may also focus on different aspects of suicidal thinking, such as the extent of the

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passive wish to die vs the active intent to attempt suicide, the subjective sense of control of suicidal thoughts, attributed causes for the act or the stage of planning. Furthermore, the predictive value of any test or risk indicator depends on the base rate of the outcome within the population [30]. Therefore, as the rate of suicide attempts among MDD patients in psychiatric settings [24] is probably higher than in primary care [29], utility of suicidal ideation as a predictor may be better there than in primary care. Most contacts with MDD patients occur in primary health care, but in this setting suicidal ideation may often go unnoticed [29], as may also the intent of a suicidal act before completed suicide [9]. Overall, little is known about differences in the predictive values of available assessment methods between the general population, primary health care and secondary-level psychiatric care [18,22].

We assessed suicidal ideation in six alternative ways among primary care MDD patients and secondary-level psychiatric care out- and inpatients with MDD. We hypothesized that (1) differences in the assessment methods significantly impact the prevalence of suicidal ideation. Further, we expected that (2) the level of the treatment setting would further influence concordance of evaluations; concordance was anticipated to be affected more in severe cases (inpatients) than in milder cases (in primary care). We also explored (3) the extent to which the alternative assessments cause inconsistency in the observed risk factors for suicidal ideation, and (4) their predictive value for suicide attempts within six months.

2. Subjects and methods

This study consists of two cohorts from the city of Vantaa: The Vantaa Primary Care Depression Study (PC-VDS), which comprises primary care patients, and the Vantaa Depression Study (VDS), which comprises secondary psychiatric care out- and inpatients. Vantaa is the fourth largest city in Finland, with a population of 200,055 in 2010.

The background and methodology of the VDS and PC-VDS have been described in detail elsewhere [16,28]. In brief, these studies are collaborative depression research projects between the Mood, Depression and Suicidal Behaviour Unit of the National Institute for Health and Welfare, Helsinki, the Department of Psychiatry, Peijas Hospital, Helsinki University Central Hospital (VDS) and the Primary Health Care Organization of the City of Vantaa (PC-VDS), Finland. The aim of these five-year prospective cohort studies was to obtain a comprehensive view of the clinical characteristics and outcome of patients with depression in terms of recovery, chronicity and recurrences, suicidal behaviour and functional disability. The study protocol of the VDS was approved by the relevant ethics committee in December 1996 and the PC-VDS in December 2001.

2.1. Methodology of PC-VDS (primary care patients)

Sampling for the PC-VDS cohort was based on prevalent cases of depressive disorders in primary care. In the first stage, 1119 consecutive patients aged 20–69 years were screened in general practitioners' waiting rooms between 2 January and 31 December 2002. The patients were asked two questions of the screening questionnaire of the Primary Care Evaluation of Mental Disorders (PRIME-MD): "during the last month have you often been bothered by (1) feeling down or depressed of hopeless or (2) little interest or pleasure in doing things". The screening was considered positive if the patients answered "yes" to either of these questions. An interview was conducted by telephone to ensure that the 375 screen-positive patients had at least one core symptom of MDD according to the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P). In the second stage, after obtaining written informed consent, the 175 potentially eligible patients were interviewed face-to-face by a psychiatrist (MV) using the SCID-I/P with psychotic screen. The diagnostic reliability for depressive disorders was perfect ($\kappa = 1.0$) [28]. Included in the PC-VDS were 91 patients with current MDD and 46 patients with subsyndromal depressive disorders; 5% of all patients declined to participate. This report comprises the 91 MDD patients in the PC-VDS cohort.

2.2. Methodology of VDS (secondary psychiatric care out- and inpatients)

Sampling for the VDS cohort was based on incident cases of MDD in psychiatric care. In the first stage, 806 patients at the Department of Psychiatry were screened for a possible new episode of MDD between 1 February 1997 and 31 May 1998[16]. The screening instrument included the five screening questions for depression in the WHO SCAN 2.0. The SSI was also used in order to disclose cases with moderate-to-severe suicidal ideation or plans. After a positive response to any of the SCAN-screening questions, clinical suspicion of depression, or a score of six or more on the SSI the patient was considered screening positive. Of the 703 eligible patients, 542 (77%) gave their written informed consent. In the second phase, a researcher using the WHO SCAN 2.0 interviewed the 542 consenting patients, 269 (223 outpatients, 46 inpatients) of whom were subsequently diagnosed with DSM-IV MDD and included in the study. The diagnostic reliability for MDD was excellent ($\kappa = 0.86$) [16].

2.3. Baseline self-report and clinician-rated scales in PC-VDS and VDS

In both cohorts, baseline instruments included the 17-item Hamilton Depression Scale (HAM-D), the Social and Occupational Functioning Assessment Scale of DSM-IV (SOFAS), the Perceived Social Support Scale-Revised (PSSS-R), the 21-item Beck Depression Inventory (BDI) and the Beck Hopelessness Scale (BHS).

2.4. Differences in diagnostic methods between PC-VDS and VDS

For Axis II diagnoses, the Structured Clinical Interview for DSM-III-R personality disorders (SCID-II) was used in the VDS, whereas the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) was used in the PC-VDS. Moreover, due to differences in methods of assessment between WHO SCAN 2.0 and the SCID-I/P, of the substance use disorders, only alcohol dependence was included here as a potential risk factor.

2.5. Assessment of suicidal ideation

Suicidal ideation was assessed in both cohorts in several identical ways; the differences in findings of assessments within and between cohorts are the main focus of this study. Firstly, patients were asked whether they had ever seriously considered suicide during the current (index) MDD episode [24,29]. Secondly, the Scale for Suicidal Ideation (SSI) was used [2]. The SSI is a 19-item observer scale designed to quantify the intensity of current conscious suicide ideation in various dimensions of self-destructive thoughts or wishes: the extent of the wish to die, the desire to make an actual suicide attempt and details of any plans as opposed to internal deterrents to an active attempt and subjective feelings of control and/or intent regarding a proposed attempt. Each of the 19 items consists of three alternative statements graded in intensity from 0 to 2, with a maximum total score of 38. Thirdly, Beck Depression Inventory (BDI) item 9 was used [3]. This item has the following alternative statements: 0 = I do not have any thoughts of killing myself, 1 = I have thoughts of killing myself,