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Research report

Why does the lifetime prevalence of major depressive disorder in the elderly appear to be lower than in younger adults? Results from a national representative sample

Nicolas Hoertel [a,b,c,*], Yann Le Strat [b,c,e,f], Philip Gorwood [b,c,g], Céline Béra-Potelle [d], Jean-Pierre Schuster [a,b], Aude Manetti [a,b], Caroline Dubertret [b,c,e,f], Frédéric Limosin [a,b,c]

[a] Assistance Publique-Hôpitaux de Paris (AP-HP), Hôpital Corentin-Celton, Service de psychiatrie, 92130 Issy-les-Moulineaux, France
[b] Université Paris Descartes, PRES Sorbonne Paris Cité, Paris, France
[c] INSERM UMR 894, Centre Psychiatrie et Neurosciences, Paris, France
[d] Service de Psychiatrie, Centre Hospitalier Universitaire de Reims, Reims, France
[e] Assistance Publique-Hôpitaux de Paris (AP-HP), Hôpital Louis Mourier, Service de psychiatrie et addictologie, Colombes, France
[f] Université Paris Diderot, PRES Sorbonne Paris Cité, Paris, France
[g] Groupe Hospitalier Sainte-Anne, CMME, Paris, France

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ABSTRACT

Background: The explanation of the lower lifetime prevalence rate of major depressive disorder (MDD) in older adults compared to younger people in community surveys is debated. This study examines the hypothesis that the decrease of the lifetime prevalence of MDD in older adults may be due to an age-related difference in the lifetime prevalence of subthreshold hypomania and, to a lesser extent, to the increased rate of medical induced-depression.

Methods: Data were derived from the National Epidemiological Survey on Alcohol and Related Conditions (NESARC), a national representative sample of 43,093 adults of the United States population. We examined lifetime prevalence rates of pure MDD and MDD plus subthreshold hypomania (D(m)) by age, assuming that the lifetime prevalence of pure MDD in older adults would be similar to that in the youngest cohort, consequent to an inverse age-D(m) relationship. We further considered non-hierarchical MDD (i.e., general medical condition depressive disorders were not ruled out) with the same method.

Results: The lifetime prevalence of D(m) among depressed adults aged 65 years and over was substantially lower compared to the youngest group. When considering non-hierarchical MDD, the odds ratio of the lifetime prevalence estimates of non-hierarchical pure MDD in older adults compared to the youngest group appeared not significantly different from 1.

Conclusions: Findings indicate that the decrease of lifetime prevalence of MDD in older adults may be due to an age-related difference in the lifetime prevalence of subthreshold hypomania and, to a lesser extent, to the increased rate of medical induced-depression.

1. Introduction

Community surveys report a lower lifetime prevalence rate of major depression in older than in younger adults (Blazer and Hybels, 2005; Jorm, 2000). Most of the explanations for this finding stress the possibility that major depression is underestimated among the elderly. Suggested biases include (1) age-related differences in recall, favored by cognitive impairment as well as by depression itself, (2) cohort effect on mortality and suicide, and (3) selection biases linked to the household approach, where willingness to participate and admitting psychiatric symptoms in interview might not be identical according to psychiatric morbidity and age (Kessler et al., 2010). However, evidence for these methodological interpretations is weak (Ernst and Angst, 1995), leading some authors to propose that the lower estimated prevalence of depression in the elderly might be a true finding (Blazer and Hybels, 2005). Therefore, the explanations of the lower lifetime prevalence of major depression in older adults remain still debated.

One issue that complicates the estimation of the prevalence of major depression in older adults is that many physical disorders, which can induce depression (Bremmer et al., 2008; Salaycik et al., 2007), become increasingly prevalent in old age, making

* Correspondence to: Hôpital Corentin-Celton, 4 parvis Corentin Celton; 92130 Issy-les-Moulineaux, France. Tel.: +33 1 58 00 44 21; fax: +33 1 58 00 44 53.
E-mail address: nico.hoertel@yahoo.fr (N. Hoertel).

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boundaries with depression sometimes unclear and raising the possibility that depression is underestimated. At the same time, late-life depression has been found to increase risk of some physical disorders (Bremmer et al., 2007; Petronijevic et al., 2008). Previous researches have consistently found that current prevalence of most mental disorders decreases with age (Blazer and Hybels, 2005) while the prevalence of many physical disorders increases (Drayer et al., 2005). However, a recent study (Kessler et al., 2010) reports that the association of major depressive episode (MDE) with comorbid mental disorders generally increases with age while the associations of MDE with comorbid physical disorders generally decreases with age. Findings from this latter study argue against the suggestion that the low estimated prevalence of MDE among older adults is due to increased confounding effect of physical disorders (Kessler et al., 2010).

Growing clinical and epidemiologic evidence supports the validity of distinguishing MDD plus subthreshold hypomania (D(m)) from pure MDD in the psychiatric classifications, recently acknowledged in the posted DSM-V update (Angst et al., 2010). Prior researches conducted in both clinical and general population (Angst et al., 2003, 2012; Hoertel et al., 2012a; Lewinsohn et al., 1995; Merikangas et al., 2008; Szadoczky et al., 1998; Zimmermann et al., 2009) suggest that subthreshold hypomania is present in 30% to 55% of individuals with MDD and associated with increased risk for suicide (Angst et al., 2003, 2010; Judd and Akiskal, 2003, Hoertel et al., in press), and a higher conversion rate to threshold-level bipolar disorder (Fiedorowicz et al., 2011; Zimmermann et al., 2009). Therefore, the lifetime prevalence estimate of D(m) in older adults could be lower than that of pure MDD and explain the low estimated prevalence of MDD in older adults.

Postulating that lifetime pure MDD in older adults is as prevalent as in the youngest adults, one potential explanation is an age-related difference in the lifetime prevalence of subthreshold hypomania, resulting in a low estimated lifetime prevalence of depression in older adults.

Therefore, the aim of the present study was to examine the impact of subthreshold hypomania on the lifetime prevalence of MDD by age, using a large (n=43,093), nationally representative of the U.S. general population sample, the National Epidemiological Survey on Alcohol and Related Conditions (NESARC). We first examined lifetime MDD prevalence by age to confirm that an inverse age-MDD relationship does exist in the NESARC. We then examined lifetime prevalence rates of pure MDD and D(m) by age, assuming that the lifetime prevalence of pure MDD in older adults would be similar to that in the youngest cohort, consequent to an inverse age-D(m) relationship. We further considered lifetime non-hierarchical MDD (i.e., general medical condition depressive disorders were not ruled out), and applied the same method. We hypothesized that the decrease of the lifetime prevalence of MDD in older adults may be due to an age-related difference in the lifetime prevalence of subthreshold hypomania and, to a lesser extent, to the increased rate of medical induced-depression.

2. Method

The 2001–2002 NESARC is a nationally representative survey of the adult population of the United States conducted by the U.S. Census Bureau under the direction of the National Institute on Alcoholism and Alcohol Abuse (Grant et al., 1995). The NESARC target population was the civilian noninstitutionalized population, aged 18 years and older, residing in households and group quarters in the 50 states and the District of Columbia. Face-to-face personal interviews were conducted with 43,093 respondents. African Americans, Hispanics, and young adults (ages 18–24 years) were oversampled. Data were adjusted to account for oversampling and respondent and household nonresponse. The overall survey response rate was 81%. The weighted data were then adjusted with the 2000 decennial census to be representative of the U.S. civilian population for a variety of sociodemographic variables. The research protocol, including informed consent procedures, received full ethical review and approval from the U.S. Census Bureau and the Office of Management and Budget (Grant et al., 1995).

3. Diagnostic assessment

3.1. DSM-IV diagnostic interview

All psychiatric diagnoses were made according to the DSM-IV criteria with the Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV Version (AUDADIS-IV), a valid and reliable fully structured diagnostic interview designed for use by professional interviewers who are not clinicians (Grant et al., 1995, 2004). The test–retest reliabilities of AUDADIS–IV measures of DSM–IV mood disorders, including hypomania and mania, were fair to good, kappa ranging from 0.42 to 0.67 (Grant et al., 2004). The test–retest reliability (Grant et al., 2003; Hasin et al., 2005) of the AUDADIS-IV diagnosis of MDE are good (κ=0.64–0.67), and a clinical reappraisal study (Canino et al., 1999) of major depression indicated good agreement between AUDADIS-IV and psychiatrist diagnoses (κ=0.64–0.68).

3.2. Lifetime mood disorders assessment

All lifetime mood disorders (bipolar I disorder, bipolar II disorder, and major depressive disorder) were diagnosed using an extensive list of symptom questions that operationalize all DSM-IV criteria for mood disorders, except for the requirement of symptoms assessing a mixed episode (criterion B for major depressive disorder and criterion C for hypomania). A major depressive episode (MDE) was assessed when a participant reported at least 2 weeks of persistent depressed mood or anhedonia, accompanied by a total of at least 5 of the 9 DSM-IV symptoms of MDE during the episode (Grant et al., 2005; Hasin et al., 2005). Major depressive disorder (MDD) was defined as having a lifetime history of at least 1 MDE, without a lifetime history of mania or hypomania.

Consistent with previous epidemiological studies (Angst et al., 2010; Hoertel et al., 2012a, in press; Zimmermann et al., 2009), criteria for subthreshold hypomania diagnosis included the presence of at least one of the three screening questions for the criterion A of hypomania: (i) "In your entire life, have you ever had a time lasting at least 1 week when you felt so extremely excited, elated or hyper that other people thought you weren't your normal self?" or (ii) "In your entire life, have you ever had a time lasting at least 1 week when you felt so extremely excited, elated or hyper that other people were concerned about you?" or (iii) "In your entire life, have you ever had a time lasting at least 1 week when you were so irritable or easily annoyed that you would shout at people, throw or break things, or start fights or arguments?", and failure to meet the full diagnostic criteria for mania or hypomania. Participants with a lifetime history of MDD who endorsed either of these questions were considered as having a lifetime MDD plus subthreshold hypomania (D(m)). By contrast, pure MDD was defined as having a lifetime history of MDD, without history of mania, hypomania or subthreshold hypomania.