The association between delusional-like experiences and suicidal thoughts and behaviour

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Abstract

Background: Delusional-like experiences (DLEs) are common in the general population. Whilst it is well known that psychotic disorders increase the risk of suicide, it is unclear if DLEs are also associated with suicidal thoughts and behaviour. This study aims to explore these variables in a large population-based sample.

Method: Participants were drawn from a national survey of mental health (n=8841) in Australia. The Composite International Diagnostic Interview was used to identify DLEs, psychiatric disorders, and information related to suicidal ideation, suicide plan and suicide attempts. We examined the relationship between DLEs and suicidal ideation, plans and attempts using logistic regression, adjusted for a range of potentially confounding variables.

Results: 8.4% of subjects endorsed one or more DLEs. 12.9% subjects reported suicidal ideation, 3.8% suicidal plans, and 3.0% a suicide attempt at some point in their lives. Those with any DLE were about two to four times as likely to report suicidal ideation, plans or attempts. There was a dose response relationship between DLEs and endorsement of suicide-related items.

Conclusions: DLEs are common in the general population and appear to be independently associated with suicidal thoughts and behaviour. DLE may provide a marker of vulnerability to suicide, and thus could be of value in future suicide prevention research.

1. Introduction

Suicide is the end result of complex interactions between biological, psychological, social and environmental factors (Qin et al., 2003). A great deal of research has focused on identifying risk factors and clinical syndromes that are associated with suicidal thoughts and behaviour, with the intention of improving early intervention and prevention services (Bertolote et al., 2005; Mann et al., 2005; Nock et al., 2010). With respect to serious mental illness, it has long been appreciated that individuals with psychotic disorders such as schizophrenia are at increased risk of suicide compared to the general population (Saha et al., 2007). For example, a systematic review and meta-analysis (Li et al., 2011) that ranked the effect sizes between various mental disorders versus risk of suicide, reported that schizophrenia was associated with highest risk of suicide in males (Relative Risk = 11.8) and was the third highest risk factor for suicide in females (Relative Risk = 12.6).

With respect to the links between schizophrenia and suicide, because schizophrenia is a low prevalence disorder, it has been estimated that this disorder accounts for only about 6.6 to 8.3% of all suicides (Li et al., 2011). Clearly, resources related to the prevention of suicide in those with schizophrenia should be allocated to clinical settings that provide care for serious mental illness. However, whilst psychotic disorders are relatively infrequent, isolated hallucinations and delusional-like experiences (DLEs) are common in the general population. A systematic review (based on 47 publications) reported that the median prevalence of hallucinations and DLEs was 5.3%, but over a quarter of the studies reported prevalence estimates of 14.4% or more (van Os et al., 2009). From a public health perspective, the allocation of resources needs to consider not only the size of the relative risk (i.e. weak versus potent risk factors), but also the...
prevalence of those exposures (i.e. rare versus common risk factors). Averting common but weak risk factors may prevent more adverse health outcomes compared to averting rare but potent risk factors (Rose, 1992). In light of the prevalence of DLEs in the community, if these experiences are associated with even a small increased risk of suicide, then DLEs would warrant closer inspection from a public health perspective. To date, we are aware of only one study that has directly examined the association between DLE and suicidal thoughts and behaviour. A Japanese study of adolescents aged between 12 and 15 years found an association between psychotic-like experiences and suicidal ideation (Nishida et al., 2010).

The aim of the current study was to examine the association between DLEs and suicidal thoughts and behaviours based on a large population-based study of adults. We hypothesised that individuals who reported DLEs would be more likely to experience suicidal ideation, plans or suicide attempts, and that this relationship would persist after controlling for the presence of common psychiatric disorders (e.g. any depression, anxiety) or other known factors associated with both suicide and DLEs (e.g. drug or alcohol abuse/dependence, trauma or physical disorders).

2. Methods

2.1. Participants

Subjects were drawn from the Australian National Survey of Mental Health and Wellbeing 2007. Full details of the methodology have been published elsewhere (Slade et al., 2009). In brief, the survey was a national face-to-face household survey of community residents aged between 16 and 85 years. Sampling was based on random selection from a stratified, multistage area probability sample of private dwellings. Interviews were carried out from August to December 2007. In total, 8841 individuals participated in the survey. The interview was computerised and conducted by trained interviewers from the Australian Bureau of Statistics, a statutory body responsible for conducting such surveys using ethical protocols that include written informed consent.

2.2. Assessment of suicidality

In the survey instrument, there was a section on suicidality designed to elicit information on suicidal ideation, plans and suicide attempts (Johnston et al., 2009). Questions including ‘seriously thought about committing suicide’ (suicidal ideation), ‘made a plan for committing suicide’ (suicide plan), and ‘attempted suicide’ (suicide attempt) were asked for two periods: ‘lifetime ever’ and ‘within the past 12 months’. In this study we examined lifetime ever suicidality. The wording of these items is shown in Appendix 1.

2.3. Assessment of DSM-IV and delusional-like experiences

A modified version of the World Mental Health Survey Initiative of the Composite International Diagnostic Interview (WMH-CIDI 3.0) was used to collect a broad range of demographic and mental-health related variables, and to generate DSM-IV lifetime presence of common mental health disorders (including any anxiety disorders, any depressive disorders, any alcohol or drug use/dependence, any affective or non-affective or bipolar disorders) (Slade et al., 2009). DSM-IV lifetime diagnoses of anxiety disorders include panic disorder +/− agoraphobia, agoraphobia +/− panic, generalised anxiety disorder, obsessive compulsive disorder and social phobia whilst any depressive disorders include mild, moderate and severe depressive disorders.

For the assessment of DLEs, we used the items designed to screen for possible psychosis (see Appendix 1). Briefly, the DLEs component was composed of three ‘screen’ items followed by three ‘probe’ items. Subjects who responded positively to any of the screen items were administered the related probe item. The items covered the following features of psychotic disorders: delusions of control, thought interference and passivity (Questions 1 and 1a); delusions of reference and persecution (Questions 2 and 2a); and grandiose delusions (Questions 3 and 3a).

2.4. Assessment of trauma and physical disorders

To ascertain trauma exposure, the CIDI elicits responses from 29 questions pertaining to past exposure to traumatic events. For example, all respondents were asked the question for rape/sexual assault: ‘have you ever raped?’ or ‘have you ever sexuallly assaulted (excluding rape)?’ Full details of the trauma exposure variables can be found elsewhere (Saha et al., 2011b).

The WMH-CIDI instrument also includes checklists related to the presence of physical disorders. Details of the methodology have been published elsewhere (Saha et al., 2011a). In brief, respondents were asked if they had ever had six somatic illnesses: (a) asthma, (b) gout, rheumatism or arthritis, (c) cancers, (d) diabetes or high blood sugar levels, (e) any heart attack, angina or high blood pressure, and (f) stroke or effects of stroke. In keeping with our previous analyses (Scott et al., 2007; Scott et al., 2008; Varghese et al., 2011; Saha et al., 2011), individuals who reported a past history of schizophrenia were excluded from the analyses (n = 68) leaving a total of 8773 subjects for this study.

2.5. Data analyses

For the main analyses, we examined the association between DLEs (the predictor variable) and lifetime suicidal ideation, plans and attempts (dependent variables) using a series of logistic regression analyses. Because demographic variables such as age, sex, marital status and migrant status have been associated with DLEs and/or suicidal ideation and behaviour (Scott et al., 2008; Johnston et al., 2009), we included these as covariates in the main analyses. As previous studies reported that suicidal behaviours and DLEs are associated with (a) alcohol and drug abuse/dependence (Borges et al., 2000; Degenhardt and Hall, 2001), (b) anxiety and depressive disorders (Sareen et al., 2005; Nock et al., 2008; Varghese et al., 2011), and (c) trauma (Scott et al., 2007; Stein et al., 2010), we examined a second series of models, which also adjusted for these potential confounding factors. We used chi-square tests to examine linear trends between the variables of interest.

To explore the findings under more restrictive conditions we undertook sensitivity analyses by repeating the main analyses (a) adjusted for the presence of physical illness (Saha et al., 2011a), (b) in the subgroup of the sample who endorsed any of the secondary ‘probe items’ (in order to reduce the chance of innocent misinterpretation of the items), and (c) in the sample when divided into two subgroups based on the presence or absence of lifetime diagnosis of any CIDI-derived DSM-IV diagnoses (in order to compare the strength of the association between DLEs and suicidal behaviour in the subgroup with subclinical symptoms only versus those with a lifetime history of any mental disorder).

The sample was weighted to match census population distribution on a number of geographic and socio-demographic variables. This adjusted for differential probabilities of selection within households, over-sampling of population subgroups and non-response (Slade et al., 2009). Person weights were calibrated against known population estimates. Replicate weight variables were developed using the jack-knife method of replication (i.e. the analysis was repeated after one subject was dropped and then the standard error was derived from the distribution of results from all ‘minus one’ resamples). In the analyses, these weights were used to generate appropriate standard errors from which precise 95% confidence
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