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Author(s)	Casey, Patricia; Jabbar, Faraz; O'Leary, Eamonn; Doherty, Anne M.
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SUICIDAL BEHAVIOURS IN ADJUSTMENT DISORDER AND DEPRESSIVE EPISODE

Casey P; Jabbar F; O'Leary E; Doherty AM

Abstract

Background: Little is known about suicidal ideation and behaviours in adjustment disorder (AD). In this paper we sought to examine the variables independently associated with suicidal ideation and behaviour in patients diagnosed with AD or depressive (DE) episode among psychiatric outpatients and in liaison psychiatry.

Methods: 370 patients who were referred to the liaison psychiatry services (including those seen in the Emergency Department) at 3 Dublin hospitals, and were clinically diagnosed with either DE or AD, based on the ICD 10 diagnostic criteria, were recruited to the study. We examined their demographic and clinical characteristics, and the associations between these and suicidal ideation and behaviour on multivariate analysis.

Results: Younger age, single marital status, and greater severity of depressive symptoms , were significantly associated with suicidality across both diagnoses. On multivariate analysis, greater severity of depressive symptoms was associated with suicidality in those with AD (P=0·012) and DE (p=0·009). Those with AD exhibited suicidality at lower symptom scores than did those with DE but in both groups it still occurred at the highest level of severity. There were differences in the objective circumstances measure of suicide intent.

Limitations: We used clinical diagnosis rather as the main diagnostic classification. The generalizability of this paper may be limited to consultation-liaison psychiatry settings, where suicidal ideation and behaviours are common.

Conclusions: Suicidality in AD and DE has broadly similar risk factors but differ in aspects of suicide intent. Different mechanisms may underpin suicidality in those with AD compared to DE.

Keywords

Adjustment Disorder

Depressive episode

Suicidal ideation

Self harm

Liaison psychiatry

Introduction

Adjustment disorder (AD) is defined by the World Health Organisation (WHO) as a state of "subjective distress and emotional disturbance, usually interfering with social functioning and performance, and arising in the period of adaptation to a significant life change or to the consequences of a stressful life event" (WHO, 1992). The *International Classification of Diseases (Tenth Edition)* (ICD-10) (WHO, 1992) requires that onset of symptoms occurs within one month of the stressful event while the *Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition) (*DSM-5) requires the onset of symptoms within three months (APA, 2013). Unlike major depressive disorder (MDD), where both classification systems list the symptoms which must be present in order for the diagnosis to be made, both systems are vague regarding the symptoms required for the diagnosis of AD. Regarding symptoms, ICD-10 states:

> "Symptoms or behaviour disturbance of types found in any of the affective disorders (except delusions and hallucinations), any disorders in F4 (neurotic, stress related and somatoform disorders) and conduct disorders, so long as the criteria of an individual disorder are not fulfilled. Symptoms may be variable in both form and severity." (WHO 1992)

Suicidal ideation is common in MDD and depressive episode (DE), with a prevalence of between 10 and 48% (Greenberg et al, 1995; Nock et al, 2008). Suicidal ideation is more common in those admitted to psychiatric units with a diagnosis of AD than in other diagnoses, including DE (Nock et al, 2008). In community samples comparing AD and DE the prevalence of suicidal ideation is similar (Nock et al, 2008; Casey et al, 2006a).

Suicidal behaviour in AD (self-harm irrespective of motivation or intent) is common, varying between 25% and 60%, depending on age (Pelkonen et al, 2005; Kryzhananovskaya and Canterbury 2001). Compared to those with DE, suicidal behaviour in AD is associated with lower levels of education, single marital status, lower socio-economic status, more familial instability, emotional deprivation in childhood and less planning of the attempt (Polyakova et al, 1998). The risk factors associated with

suicidal behaviour in DE include younger age, major depression, dysthymia, PTSD and alcohol dependence (Bernal et al 2007). Suicidal behaviours occur earlier in the course of AD than in DE (Runeson et al, 1996), as does suicide (Portzky et al 2005; Schnyder and Valach 1997).

All aspects of suicidality, including suicidal ideation, behaviour or death by suicide have been under researched in AD, instead focussing on DE and other mood disorders (Bernal et al 2007). This neglect is surprising considering suicidality is commonly associated with AD in the emergency department (ED) (Schnyder and Valach 1997), and among among those admitted for in-patient psychiatric treatment (Greenberg et al, 1995).

The results presented here are part of a larger study examining AD and DE in liaison psychiatry. We examined the variables independently associated with suicidal ideation and behaviour in those diagnosed with AD or DE.

The aim of this study was to identify similarities and risk factors associated with suicidality in AD and DE respectively. We hypothesised that these would be similar in both diagnoses.

Methods

We recruited patients from the liaison psychiatry services (including those seen in the ED) at three Dublin hospitals who were diagnosed by the liaison psychiatrists with either DE or AD, based on ICD-10 diagnostic criteria (WHO 1992).

We excluded those whose primary diagnosis was a substance use disorder, with cognitive impairment, who were incapable of giving informed consent, who were under 18, who had psychotic symptoms and who were not competent in the English language.

Patients were interviewed at two points by a researcher blind to the clinical diagnosis, at recruitment and at 6 months using validated instruments. This paper will focus on the cross-sectional data obtained from the first interview. The instruments used included:

1. SCAN – Schedules for Clinical Assessment in Neuropsychiatry, a clinician-administered structured interview schedule providing diagnoses based on ICD-10; it includes AD in a section entitled 'Inferences and Attributions', only used if caseness for another diagnosis is not reached (Wing et al, 1990).

2. BDI-II – Beck Depression Inventory, second edition is a 21-item self-report schedule of depressive symptoms (range 0- 63), with higher scores indicating more severe symptomatology (Beck et al, 1961, Beck et al, 1996). For analysis, we used the total score on BDI-II minus question 9 measuring suicidality) to avoid collinearity.

3. IDS-C30 – Inventory of Depressive Symptoms – Clinician Rated is a 30-item clinician administered schedule of depressive symptoms (range 0-90), where higher scores indicate greater symptom severity (Trivedi et al, 2004). We excluded question 18, measuring suicidality, to avoid collinearity.

4. The List of Threatening Experiences is a measure of life events in the preceding 6 months, comprising 12 questions for 12 different traumatic life events (range 0-12) (Brugha et al, 1985).

5. SAPAS Standardised Assessment of Personality- Abbreviated Scale is an 8-item self-rated personality disorder screen (range 0 – 8), where a score of >3 indicates a probable personality disorder (Moran et al, 2003).

6. Oslo Social Support Scale is a self-rated instrument which assesses perceived social support, comprising three subscales. The total score ranges from 3-14, with a higher score indicating greater perceived support (Nosikov, 2003).

7. SFS – Social Functioning Schedule was used to assess social dysfunction by rating functioning over a number of domains on an analogue scale. A higher score indicates greater levels of social dysfunction (Remington and Tyrer, 1979).

8. SIS – Suicide Intent Scale is a 15-item self-report questionnaire with subjective and objective measures of severity of intent in patients presenting with suicidal behaviour. Each question is rated 0-2, with a higher score indicating a greater degree of suicidal intent (Beck et al, 1974a).

9. SSI - Scale of Suicidal Ideation is a 19-item self-report schedule assessing suicidal ideation in individuals who did not present following suicidal behaviour. Each question is rated 0-2, with a higher score indicating a greater degree of suicidal ideation (Beck et al, 1974b).

10. DUREL – Duke University Religion Scale is a 5-item scale measuring aspects of religiousness. For this study subscale 1, examining participation in organised religion, was used (Koenig et al, 1997).

Measures of suicidality

To assess suicidality we used three different measures:

a. All participants completed the IDS-C30: Question 18 (Q18) allows evaluation of suicidality spanning passive death wishes, suicidal ideation and self-harm (Trivedi et al, 2004).

b. Participants who presented following an act of suicidal behaviour completed the SIS (Beck et al, 1974a).

c. Participants who presented with features other than suicidal behaviour completed the SSI (Beck et al, 1974b).

Definitions

Suicidality was defined as any symptom relating to suicide, including suicidal ideation or suicidal behaviour.

Passive death wishes were coded as an absence of suicidal ideation.

Suicidal behaviour refers to self-harm irrespective of method used or its lethality, motivation or level of suicide intent.

Diagnostic gold standard & measures of AD

Structured interviews for AD are poorly developed. In those that include AD, the diagnosis is only made if the threshold for another disorder is not met. This approach, ignoring context, has been criticised by many researchers in the area of stress-related disorders (Strain and Diefenbacher, 2008; Baumeister et al, 2009). Accordingly, we chose clinical diagnosis as the diagnostic gold standard for this study, although we also used a structured interview (SCAN) for the purpose of other analyses (Wing, 1990).

Power Calculation & Statistics

Power calculations were based on methodology of Smith and Morrow (Smith and Morrow, 1996). For 95% confidence of detecting a difference in depressive symptomatology of similar magnitude to that detected in Casey et al: at a significance level of $p<0\cdot05$, we required 180 individuals with AD and 180 with DE (Casey et al, 2006b).

Statistics analysis was conducted using SPSS (v20) and STATA. Univariate analysis included Independent Samples T-test, the Mann-Whitney U Test and Chi-Square Test examining the differences in suicidality for various demographic and clinical variables. Binary multivariate analysis using ordinal and linear regression examined the independent contribution of these variables to suicidality in AD and DE.

In our secondary analysis we conducted an exploration of possible mediators of the relationship between life events and suicidality in AD, using the method of Baron and Kenny (Baron and Kenny 1986).

Ethics

Prior to commencement, this study was approved by the Research Ethics Committees of the MMUH (May 2008), the Rotunda Hospital (December 2009), and SJH (November 2011). This study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2008). All participants provided written informed consent.

Results

370 individuals were identified: 185 with a clinical diagnosis of AD and 185 with a diagnosis of DE. Of these, 173 with AD and 175 with DE agreed to participate. Among those with AD, 19·7% had features of suicidality (either suicidal ideation or behaviour) while in DE the figure was 24·6%. This difference was not significant. On SCAN diagnosis, there was a significant excess of suicidality in patients with DE compared with AD: 24·1% and 10·2% (p=0·030) respectively.

We examined suicidality in both diagnostic groups using Q18 of the IDS-C30. In AD, 9·8% (n= 17) of participants presented with suicidal behaviour, 9·8% (n= 17) with suicidal ideation, 31·2% (n= 54) with passive death wish and 49·1% (n= 85) without any suicidal ideation /death wish. In DE, the figures respectively were 12% (n= 21), 12·6% (n= 22), 40·6% (n= 71) and 34·9% (n=61). These differences between the two groups were not significant (p=0·063).

Demographic and clinical profile

The demographic profile of suicidal and non-suicidal patients (Q18 of IDS-C30) for both diagnostic groups is shown in table 1.

Table 1 near here

Suicidal participants with AD were younger, with higher depression scores (even when items relating to suicidality were removed), less likely to participate in organised religion, more likely to have possible personality disorder and with more life events than those who were not suicidal. There was a trend towards lower levels of social support, and no association with social functioning.

Suicidal participants with DE were younger, had higher depression scores and less participation in organised religion than the non-suicidal participants. They were less likely to be married, had lower social supports and experienced more impairment in social functioning. Unlike AD, there was no relationship to personality disorder and no excess of life events. Gender differences were absent in

both diagnostic groups. Thus there were similarities and differences between both diagnostic groups who reported suicidality.

Further examination of the suicidal groups in the AD and DE indicated that those with AD had significantly lower total scores on BDI-II (30.4 vs 37.5; t=-2·449, p=0·024) compared to DE, and on IDSC-30 (36·2 vs 43·9; t=-3·655, p=0·013). This demonstrates that individuals with AD become suicidal at a lower symptom threshold. They also experienced more life events, but social support and social functioning did not differ.

Multivariate analysis

We performed three further analyses to explore the variables independently associated with suicidality. In the first analysis, we examined the effect of these variables on suicidality separately in AD and DE using ordinal regression, with suicidality (measured by Q18 of IDS-C30) the dependent variable.

Table 2 near here

Severity of depressive symptoms, indicated by higher BDI-II score, was independently associated with suicidality after other variables were controlled for in AD (p =0·004) and DE (p =0·011). Younger age was associated with suicidality in patients with DE (p =0·035).

For the second analysis we examined the variables associated with suicidal ideation using linear regression, where the total score of the SSI was the dependent variable (Table 3). The R^2 values indicated a greater contribution to suicidality by these variables in DE 27·9% than AD 22·5%.

Table 3 near here

Greater severity of depressive symptoms was associated with higher scores on the SSI (indicating greater severity of suicidal ideation) in both groups (p=0·006 in AD; p<0·001 in DE). Lower social support was associated with higher scores in DE (p=0·005). Younger age was significantly associated with suicidality in AD (p=0·032).

In view of the findings on univariable analysis that suicidal participants with AD experienced significantly more life events with higher rates of personality disorder, we conducted a secondary analysis examining the possible mediating role of personality disorder on the relationship between life events and suicidality in AD, but this was not significant (results available on request).

In the third analysis, those who presented with suicidal behaviour were examined separately. Numbers were small: 9·8% (n=17) and 12% (n=21) for AD and DE respectively. It was not possible to carry out separate multivariate analyses, due to lack of power. When both diagnostic groups were combined no variables were significantly associated with severity of suicidal behaviour on SIS.

Of note, there was no difference in the total score on SIS between the diagnostic groups (mean= 12·3 AD, 15·2 DE; p=0·110), but higher scores on the subscale examining objective circumstances (mean 5·0 AD, 6·9 DE; p=0·038) and differences of borderline significance in the subjective sub-scale (mean 6·8 AD, 8·9 DE; p=0·051) in DE were identified.

Discussion

There has been little research into suicidal ideation and behaviour in AD, and existing studies have major flaws, being, variously, retrospective, based on case notes and without multivariate analysis. This study is unique in its field, using validated research instruments, *a priori* power calculations and multivariable analysis.

The results indicate that AD is a potentially serious condition which can present with life-threatening features, with similar proportions in AD and DE reporting suicidal ideation or behaviour. While our study population was a liaison psychiatry sample, studies from outpatient samples (Casey et al, 2006a) and random community based samples describe similar results in prevalence of suicidal ideation (Casey et al, 2006b). The occurrence of suicidality at a lower symptom score in AD suggests that this group are more vulnerable. Both groups were above the cut-off for severe depression on BDI and IDS-C30, even when the item measuring suicidal ideation was excluded.

This we replicated previous findings which identified suicidal behaviour occurring at similarly high levels of depressive symptoms in AD compared to other mood disorders (Casey et al, 2006b).

The finding of poor agreement between SCAN and clinical diagnosis of AD and DE was not surprising and a Cohen's kappa score of 0.232 (p<0.001) has already been reported by us in this sample (Doherty et al, 2014). Poor agreement between clinical and structured interview diagnosis was also identified in a study of those presenting to the ED with suicidal behaviour, and as in this study when a structured diagnostic instrument was used DE predominated (Taggart et al, 2006). This is likely to be due to structured interviews regarding AD as a sub-threshold condition, trumped by DE once the symptom criteria are met. A criticism voiced by many is that the diagnostic instruments used in epidemiological research only measure symptoms and ignore context (Strain and Diefenbacher, 2008; Baumeister et al, 2009). A related problem, complicating the diagnosis of AD, is the non-specific nature of symptoms, resulting in overlap with mood and anxiety disorders. Thus it has been recommended that clinical diagnosis should be the Gold Standard until specifically-designed instruments are available (Strain and Diefenbacher, 2008; Baumeister et al, 2009). One such instrument has recently been developed and its psychometric properties remain to be tested (Bert et al, 2014)

In this study, the profile of suicidal participants with AD and with DE differs although in both, severity of depressive symptoms and non-participation in organised religion were significantly associated with suicidality.

When risk factors for suicidality were explored in multivariate testing, these differences disappeared except for severity of depressive symptoms which remained an independent risk factor in both groups, along with younger age in DE. When those with suicidal ideation were examined (excluding those with suicidal behaviour) using linear regression, the most consistent independent risk factor for suicidal ideation was severity of depressive symptoms in both diagnoses, with younger age in AD and poor social supports in DE risk factors for increasing severity. These variables have been identified previously (Casey et al, 2006b). Thus, there was partial support for our hypothesis.

The absence of life events or personality disorder as an independent contributor to severity of suicidality or of suicidal ideation was unexpected as both have been frequently described in the self-harm literature (Liu and Miller, 2014). However it is possible that dimensions of personality, rather than personality disorder per se, influences suicidality and its expression in self-harm. One study suggested that different mechanisms might be responsible for suicidal behaviour in AD and DE, nominating poor coping skills in AD and personality disorder in DE (Polyakova et al, 1998). This needs to be tested in further studies using dimensional measures of personality.

The over-riding finding that the severity of depressive symptoms is the most convincing contributor to the degree of suicidality or the severity suicidal ideation in both diagnostic groups has implications for the assessment of self-harm risk. The finding that suicidality is present when the threshold for a severe syndrome is reached is important, indicating that AD is, like DE, a severe condition requiring cautious clinical management and the use of appropriate interventions, social, psychological or pharmacological.

Finally we did not identify any independent risk factors in those who presented with self-harm in either DE or AD or if such risk factors differed in those with suicidal ideation versus behaviour. This is likely due to lack of power or unidentified risk variables not included in our analysis, although we did examine those commonly associated with self-harm. Further studies using adequate sample sizes, focussing specifically on those with AD who transition from suicidal thoughts to self-harm are required.

Our finding that those with DE who self-harmed had significantly higher scores in the objective circumstances score on the SIS (measuring planning, attempts at concealment, final acts, isolation and so on) accords with studies which identified the episodes of self-harm in those with AD as more impulsive and less likely to have been planned when compared to DE (Polyakova et al, 1998). Further studies would clarify if this finding can be generalised to AD in other settings or is confined to those AD patients presenting to the ED.

A strength of this study is the large sample size, calculated *a priori*, to ensure adequate power. Previous studies examining the relationship between AD and suicidality had lower numbers. Additionally, this study controlled for a wide range of known variables associated with suicidal ideation and self-harm. A third strength, although others might consider this a weakness, is the use of clinical diagnosis as the 'gold standard' rather than structured interviews. We considered this in the design of the study, concluding that the inherent flaws in the diagnostic instruments would result in a conflation of AD with DE, and would not be useful in distinguishing between the two diagnoses. Thus we made a decision to follow the advice of others in this field, in the absence of any adequate diagnostic interviews for AD at the time.

The weaknesses include the failure to find any differences between those who self-harmed in AD and DE, which could be overcome by specifically targeting a self-harm group in future studies. This prevented us from identifying risk factors related to the transition from suicidal ideation to behaviour. Finally, due to its setting in liaison psychiatry our findings may not generalise to specific populations such as primary care or community psychiatry.

This study adds to the limited research base on suicidality in AD, and suggests that different mechanisms may underpin suicidality in AD and DE. Although suicidal thoughts and behaviours occur at lower depressive symptom scores in AD, they occur in the severe range in both groups. Further studies exploring the mechanisms underpinning suicidality in AD and DE are required, with specific personality features worthy of examination. Studies examining factors associated with the transition from suicidal ideation to suicidal behaviour, especially in AD, are required to enhance our understanding of this important clinical area.

Conflict of Interests

The authors have no interests to declare

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