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The role of physical and mental health multimorbidity in suicidal ideation

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ABSTRACT

Background: Previous research has focused on the separate roles of mental illness and physical health conditions in suicide risk, with relatively few studies investigating the importance of physical and psychiatric disorder co-occurrence. We aimed to investigate whether suicidal ideation might be influenced by physical and mental ill-health multimorbidity.

Methods: Data from the Adult Psychiatric Morbidity Survey of England were analysed. Participants who responded to the suicidal thoughts question were grouped into four distinct categories based on their health conditions (Common mental disorders (CMD) only, physical health conditions only, CMD/physical health multimorbidity and a control group with neither physical nor mental health conditions). Multinomial logistic regression analyses were conducted and odds ratios (OR) and 95% CIs are presented.

Results: In the fully adjusted model, both the multimorbidity and CMD-only groups were associated with higher levels of suicidal ideation relative to the control group.

Limitations: Secondary analyses of cross-sectional data.

Conclusions: Although multimorbidity was associated with suicidal thoughts, it does not appear to elevate risk beyond the independent effects of common mental disorders or physical health problems. Primary care and mental health clinicians should consider assessment of suicidal ideation among patients with multimorbid physical/mental health conditions.

1. Background

Suicide and its prevention are significant public health issues (World Health Organisation, WHO 2014). According to the WHO's World Suicide Report, the global age-standardised suicide rate for 2012 was 11.4 per 100,000 population, which translates into 804,000 suicide deaths annually worldwide (WHO, 2014). A significant body of work has focused on describing high-risk populations, such as clinical populations with mental illness and general populations whose members experience social stressors and adverse life events (Cavanagh et al., 1999; Fässberg et al., 2012; Foster, 2011; Gonda et al., 2012; Stack, 2014). A range of sociodemographic, psychological and clinical risk factors have also been identified (Hawton et al., 2003b; Mościcki, 1997; O'Connor, 2011; O'Connor and Nock, 2014; WHO, 2014). More recently, attention has focused on somatic illness and associated morbidities such as chronic pain as potential suicide risk factors (Braden and Sullivan, 2008; Pompili et al., 2014; Ratcliffe et al., 2008; Robson, 2010; Stenager et al., 1994; Tang and Crane, 2006; Qin et al., 2013). More specifically, pain-related physical conditions like migraine and back pain have been associated with an increased risk of suicidal behaviours (Ilgen et al., 2013; Smith et al., 2004).

The influence of multiple mental illnesses on risk of suicide is of considerable interest from a global public health perspective. Several studies have reported that major depression, anxiety disorder and substance abuse are often found to co-occur with other psychiatric conditions within suicidal populations (Hawton et al., 2003a; Nock et al., 2010; Suominen et al., 1996). Such findings suggest an increased risk among people with specific multimorbid psychiatric diagnoses and highlight the need for more targeted support from mental health services (Andrews and Lewinsohn, 1992; Bronisch and Wittchen, 1994; Mościcki, 2001; Oquendo et al., 2005; Pawlak et al., 1999; Wunderlich et al., 1998). At the same time, physical health multimorbidity is also associated with an increased risk of suicidal behaviour (Druss and Pincus, 2000; Goodwin et al., 2003b). Indeed, several studies have reported that the co-occurrence of multiple physical health conditions, involving several organs or systems, may elevate risk of suicidal behaviour, even in the absence of mental illness (Scott et al., 2010; Qin et al., 2013).

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Table 1
Proportion with past year physical health conditions and current common mental disorders (CMDs) among APMS 2007 respondents.

Physical health conditions				Common mental disorders	
n (%)[a]				n (%)	
Allergies	757 (10.2%)	Epilepsy/fits	44 (0.6%)	Any phobia	160 (2.2%)
Arthritis	1309 (17.7%)	Ear/hearing problems	43 (10.0%)	Depressive episode	255 (3.4%)
Asthma	679 (9.2%)	Infectious disease	39 (0.5%)	Generalised anxiety disorder	363 (4.9%)
Bladder problems/incontinence	353 (4.8%)	Heart attack/angina	216 (2.9%)	Mixed anxiety/depressive disorder	641 (8.7%)
Bone, back, joint and muscle problems	2047 (27.7%)	High blood pressure	1514 (20.5%)	Panic disorder	83 (1.1%)
Bowel/colon problems	455 (6.1%)	Liver problems	68 (0.9%)	Obsessive compulsive disorder	86 (1.2%)
Bronchitis/emphysema	216 (2.9%)	Migraine or frequent headaches	1019 (13.8%)		
Cancer	116 (1.6%)	Skin problems	819 (11.1%)		
Cataracts/eyesight problems	1280 (17.3%)	Stomach ulcer or digestive problems	522 (7.1%)		
Dementia or Alzheimers	7 (0.1%)	Stroke	42 (0.6%)		
Diabetes	386 (5.2%)				

[a] The number of conditions may not add up to that total number of the APMS sample (n=7389), as participants had one or more of the indexed conditions.

Furthermore, studies on suicide deaths of people with physical illness diagnoses appear to have an increased prevalence of mental disorders (Henriksson et al., 1995; Qin et al., 2014; Webb et al., 2012). Chronic illnesses like cancer, asthma, musculoskeletal and cardiovascular disease may play a role in the development of suicidal behaviours, varying as a function of the presence of subsequent mental disorder (Bolton et al., 2015; Webb et al., 2012). Perhaps unsurprisingly, numerous studies have found depression to be the most common psychiatric diagnosis among chronic physically ill patients, being associated with a higher suicide risk (Anguiano et al., 2012; Pompili et al., 2012, 2014; Webb et al., 2012).

Despite the growing evidence that both mental and physical disorders contribute to suicide risk, very few studies have investigated the extent to which their co-occurrence (multimorbidity) is associated with suicide risk (Goodwin et al., 2003a; Singhal et al., 2014; Qin et al., 2014; Webb et al., 2012). Most of the extant research has focused on comorbidity and suicide risk, with comorbidity defined as a further diagnosis which is secondary to an index condition (Blasco-Fontecilla et al., 2016; Kavalidou et al., 2016; Valderas et al., 2009). To address this gap in knowledge, we aimed to investigate the extent to which suicidal ideation varies as a function of multimorbidity where individuals have at least one physical health plus at least one mental health condition. We had also initially aimed to investigate the relationship between suicide attempts and multimorbidity but this was no possible given the relatively low number of suicide attempt cases in the present sample. We hypothesised that individuals with physical/mental health multimorbidity would have a higher risk of suicidal thoughts, compared to individuals with neither physical nor mental health conditions.

2. Methods

2.1. Setting and participants

Secondary analyses of data from the Adult Psychiatric Morbidity Survey (APMS) 2007 of England were conducted. APMS 2007 is the third in a series of surveys administered in English households for adults, aged 16 and over. The survey's aim was to describe the prevalence of both treated and untreated mental illness based on self-reported information of 7403 participants. Population-based multiphase probability sampling was performed and both face-to-face and self-completion methodologies were employed. Both first and second phase interviews from the APMS were used for the data analysed in the current study. Full details of the methodology have been described elsewhere (McManus et al., 2009; National Centre for Social Research, 2011).

2.2. Measures

Mental health conditions, including prevalence of neurotic symptoms in the week prior to interview, were assessed through the revised Clinical Interview Schedule (CIS-R), a standardised interview that contains 14 sections each covering specific types of neurotic symptoms (McManus, 2009). Participants who met the criteria for a depressive episode, generalised anxiety disorder (GAD), mixed anxiety and depressive disorder (MAD), panic disorder, phobia, and obsessive compulsive disorder (OCD) were considered to have a 'common mental disorder' (CMD). With respect to health conditions, a show card of 22 health conditions was provided to participants. With the exception of "anxiety, depression or other mental health issue", all of the other conditions asked about were physical health conditions. If a positive response to a health condition was indicated, this was followed up with a question asking whether the condition had been experienced in the past year or lifetime. Given that the timeline for CMDs was current the time-frame used for physical health condition was past year. Physical health conditions experienced in the past year and current CMDs are presented in Table 1.

Items related to suicidal thoughts, suicide attempts and self-harm were assessed through the CIS-R. Participants were asked the following questions: "Have you ever thought of taking your life, even though you would not actually do it? "; "Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way? " and "Have you ever deliberately harmed yourself in any way but not with the intention of killing yourself? ". A positive response on these items was followed up with a further question on whether the thoughts/behaviours occurred during the past week, the past year or whether they were lifetime responses. No further question about the timing was asked for self-harming behaviours (i.e., cutting, burning); as a result, those behaviours were considered as lifetime occurrence. Based on the selection of past year physical health conditions and current CMD in the present study, only the items assessing past year suicidal thoughts (Yes/No replies) were used in our analyses. As noted above, although past year suicide attempts were assessed, due to the small number of suicide attempt cases, we could not be confident in the robustness of the findings, therefore the data are not presented here.

In order to investigate the extent to which the risk of suicidal thoughts varies as a function of physical and mental health multimorbidity, participants were grouped into four mutually exclusive categories: those with (1) one or more CMDs; (2) one or more physical health conditions; (3) both CMD and physical health conditions (multimorbidity) and; (4) neither physical health conditions nor CMD (controls). For the present study, multimorbidity was defined as the co-occurrence of at least two health conditions, at least one physical and one mental within the same person. The frequencies of participants as a function of physical and mental health conditions are