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The impact of suicidality on health-related quality of life: A latent growth curve analysis of community-based data

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ABSTRACT

Objective: The subjective burden of suicidality on mental and physical health-related quality of life (HRQoL) remains to be examined. Eight-year trajectories of mental and physical components of HRQoL were compared for suicidal and non-suicidal participants at baseline. The effect of poor mental and/or physical HRQoL on subsequent suicidality was also investigated.
Method: Randomly-selected community data (W1=7485; W2=6715; W3=6133) were analysed with multivariate latent growth curve (LGC) and logistic regression models.
Results: Adjusted LGC modelling identified that baseline ideation was associated with poorer mental, but better physical HRQoL at baseline (b=−3.93, 95% CI=−4.75 to −3.12; b=1.38, 95% CI=0.53–2.23, respectively). However, ideation was associated with a declining physical HRQoL trajectory over 8 subsequent years (b=−0.88, 95% CI=−1.42 to −0.35). Poorer mental HRQoL was associated with higher odds of ideation onset (OR=0.98, 95% CI=0.96–0.99).
Limitations: Frequency of data collection was four-yearly, while suicidality was reported for the previous 12-months; analyses did not control for physical health problems at baseline, baseline depression may have influenced physical QoL; suicidality was assessed with binary measures; and, prior analyses of attrition over time showed those with poorer health were less likely to continue participating in the study.
Conclusions: Suicidality has differential longitudinal effects on mental and physical HRQoL. Findings emphasise the considerable subjective HRQoL burden upon suicidal individuals. HRQoL may be useful to compare relative social and economical impacts.

1. Introduction

Suicide and suicidal behaviour exacts a heavy toll, most keenly on suicidal individuals themselves, but family members, friends, local community, and employers also bear social and emotional weights. Evidence of both the loss associated with and burden of self-harm upon the community is clearly apparent. Here, we define self-harm as self-inflicted injuries regardless of intent, inclusive of suicide, suicide attempts whether or not resulting in death (Harvard Initiative for Global Health, 2009) and suicidality as the spectrum covering suicidal thoughts, suicidal behaviours and suicide death. Suicidality has the *fourth* highest position (behind ischemic heart disease, lung cancer and cerebrovascular disease; Institute for Health Metrics and Evaluation, 2015) among the top ten causes of premature mortality per 100,000 people in Australia (445.2 years of life lost [YLL], all ages) and New Zealand (512.0 YLL) and fourth highest in the US (511.7 YLL; GBD, 2013 Mortality and Causes of Death Collaborators).

Over the last fifteen years, researchers and policy makers have become increasingly interested in comparing the impact of disorders and/or diseases, but the aforementioned comparison of disorders/conditions based on premature mortality (YLL) overlooks the non-fatal disease burden of morbidity. Prevailing diagnostic processes (i.e., DSM-5/ICD-10) have made it difficult to compare the experience and impairments of individual disorders

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or diseases. This is because the respective symptoms and effects are described in disease/disorder-centric terms (Cook and Harman, 2008). In order to address this limitation, other measures, such as Quality Adjusted Life Years (QALYs) and Disability Adjusted Life Years (DALYs) and other metrics such as those used by GBD project, have been used. Alternatively, in more recent years, research has begun to routinely consider both objective measures of impairment (i.e., impact on work, days out of role, impact on social life, visits to the doctor) and the notion of subjective wellness/quality of life, particularly health-related quality of life (HRQoL). The chief benefit of such concepts relates to the provision of a common metric which can be applied to any disease or disorder, permitting comparison of symptoms or impacts beyond the boundaries of specific health states (Spitzer et al., 1995; Cook and Harman, 2008). One example of the application of HRQoL (operationalised as unhealthy days per month) was the comparison of perceived health and quality of life of chronic medical conditions (diabetes, back/neck problems, and hypertension) and mental health conditions (depression, anxiety, or emotional problems; Cook and Harman, 2008). Results highlighted that the level of disability and impairment associated with mental health problems (17.6 unhealthy days/month) surpassed physical medical conditions (12.2–12.3 unhealthy days/month). Subsequent multivariate regression modelling adjusting for demographic and comorbid conditions were then able to further confirm the robustness of the significant impact of mental health problems on HRQoL.

Such useful attributes of a common metric have now made the HRQoL a popular concept in healthcare settings. As Miller (1996) highlights, HRQoL is helpful in health contexts as it considers health as an intrinsically continuous process, differentiating it from categorical diagnostic criteria often ill equipped to identify interval-level change in functioning – that is, change on a continuum, which is particularly relevant to sub-clinical circumstances. Moreover, objective assessments cannot fully account for an individual's subjective experience (Engel et al., 2009). Further evidence of the utility of the HRQoL concept is provided by the significant numbers of studies now utilising the Medical Outcomes Studies (MOS) Short-Form Scales (MOS SFS; e.g., SF-12, SF-36 Ware and Sherbourne, 1992). The MOS SFS group of measures are cited as being the most universally used generic HRQoL measure (Jenkins et al., 2011), and include mental and physical HRQoL subscales. This separation of mental and physical domains allows simultaneous appraisal of change in subjective mental and physical health over time – HRQoL facets likely to possess different profiles over time. For example, Fairweather-Schmidt et al. (2015) investigated the longitudinal impact of disordered eating among midlife women (aging from 45–50 to 59–64 years) using the SF-36, demonstrating those with disordered eating had reduced mental rather than physical quality of life over time.

However, while studies relating to quality of life/functional impairment have rapidly increased, very few have investigated HRQoL among those experiencing suicidal thoughts and behaviours. This is surprising for at least two reasons: suicidal ideation is not uncommon, with a recent non-clinical population-based study identifying 8.2% of participants experiencing ideation in the previous 12 months (Fairweather et al., 2007); and, suicidal ideation and attempts are most common earlier in life, during the teenage years/early adulthood, conveying a lifetime diathesis for further suicidality (O'Connor et al., 2013; Suominen et al., 2004) with probable lifelong impacts on functioning. This is borne out by most suicide deaths occurring in midlife, which is a time of key economic productivity to community and crucial responsibilities to family. Each one of these reasons emphasises the importance of better understanding factors associated with and underpinning non-fatal suicidality.

One rare HRQoL study focusing on suicidality employed a disability-weighting approach to measure the impact of suicidal ideation and attempt and compare levels of impairment with 10 other health states (estimated in previous studies) with a visual analogue scale (VAS; van Spijker et al., 2011). Results indicated that the disability weights for suicidal ideation were equivalent to the disability experienced by other psychiatric disorders, including alcohol dependence and cocaine dependence (Smit et al., 2008). In relation to somatic disorders, suicidal ideation was comparable with severe asthma, and moderate heart failure (Stouthard et al., 1997), while non-fatal suicide attempts were similar to disability experienced by the early stages of Parkinson's Disease. These findings serve to highlight the significant burden of suicidality made clear by the translation into a comparative framework that is more easily understood and interpreted.

Another recent study has used data from involving a population-representative birth cohort to investigate whether suicide attempt may be used as a signal for later poor health (e.g., depression, substance dependence, metabolic syndrome) and social functioning outcomes, including unemployment and satisfaction with life (Goldman-Mellor et al., 2014). In addition to highlighting persistently poorer mental and physical health, adjusted models indicated those who attempted suicide prior to age 24 years reported engaging in more violence, needing more welfare support, and indicated they were significantly less satisfied with their lives when assessed again at age 38 years. However, while van Spijker et al. (2011) and Goldman-Mellor et al. (2014) provide information of great value, to our knowledge no study has investigated HRQoL using self-reported data derived from a community-based sample.

Currently, surprisingly little is known of the HRQoL differences between those experiencing suicidal thoughts and/or suicide attempts and those who have not, or whether there are differences in respective longitudinal HRQoL trajectories. It also remains unclear as to whether poor HRQoL conversely is associated with increased risk of suicidality over time. MOS SFS data, including both mental and physical components of QoL, derived directly from those who have experienced suicidality would provide greater insight into the burden and personal impact of non-fatal suicidality. Thus, the purpose of the current study is to investigate three main objectives in a large community-based longitudinal cohort. First, using a population standardised (M = 50) measure of mental (MCS) and physical (PCS) quality of life (i.e., SF-12), to determine whether individuals with suicide ideation or attempt have poorer HRQoL than those without ideation or attempts; second, to investigate whether those reporting suicide ideation or attempt have disparate HRQoL trajectories relative to those who report no suicidality; and third, to identify whether poorer HRQoL is associated with increased risk of subsequent onset of suicidal thoughts or attempts, that is, testing whether the association between suicidality and quality of life is potentially bidirectional.

2. Method

2.1. Participants and procedure

The PATH Through Life Project is undertaken at the Centre for Research on Ageing, Health and Wellbeing, The Australian National University (Anstey et al., 2012). The PATH Survey is a longitudinal study and the project protocol involves re-interviewing participants every four years from 1999 until 2019. The original aims of the study were to (a) describe the course of depression, anxiety, substance use and cognitive capacity as individuals; (b) to distinguish environmental and genetic risk factors impacting individual-based factors and characteristics; and (c) to investigate associations across time between the domains of depression and anxiety, substance use, and cognitive ability and dementia (Anstey et al., 2012, p. 1). Participants were initially identified via a random