



suicidal behaviour when exposed to stressors [3]. The diathesis includes predisposing factors such as mental illness, alcohol and substance use, impaired decision making, traits such as aggression, hopelessness, and impulsivity, and dysfunction in key neurotransmitter systems including stress-response systems (see van Heeringen [4] for a review). The stress domain includes stressful life events and other state-based factors such as an episode of physical illness.

A role for life stressors in suicidal behaviours is supported by a large literature. A recent systematic review found consistent reports of associations between negative life events and suicide ideation, attempt and suicide, although the evidence was least robust for ideation [5]. While life stressors are an obvious potential trigger for a suicidal crisis, many such stressors are widely occurring and in most individuals do not result in suicidal thoughts or behaviours, indicating that other factors (i.e., elements of the diathesis) may also be involved. Understanding the role of life stressors in suicidal ideation in males, including their interaction with the diathesis for suicidal behaviour, is important for suicide prevention as it may identify potential points for early intervention before individuals escalate to more serious suicidal behaviours.

Ten to Men is a population-based study of the health of a large cohort of males aged 10–55 at recruitment. At baseline, data were collected on suicidal thoughts and behaviours, and on constructs relevant to both stress (i.e., life events) and diathesis (i.e., major psychiatric disorders) domains. This study uses the baseline data to examine the relationship of life stressors and psychiatric disorders in the past 12 months to current suicidal ideation. It assesses the salience of different stressful life events and examines the relative contribution of life events and psychiatric disorders with respect to suicidal ideation in males aged 18–

indicators of economic and social disadvantage [12].
Lower IRSD scores indicate greater disadvantage.

In multivariable analysis, six life event variables remained significantly associated with current suicidal ideation (Table 3). These were serious family conflict, difficulty finding a job, legal troubles, major loss of property, break-up of a relationship and serious personal injury (odds ratios [ORs] between 1.27 – 1.95). Among the socio-demographic covariates, age had no effect on likelihood of suicidal ideation, and being married or in a de-facto relationship and residing in areas of least socioeconomic disadvantage were protective. Among the clinical factors, those with self-reported depression in the past 12 months had four times the odds of experiencing suicide ideation (OR 4.49 95 % CI: 3.74,5.40) compared to those without depression. Past 12 month anxiety was associated with a more modest increase in the odds of experiencing suicidal ideation (OR 1.27 95 % CI: 1.02,1.57) as was past 12 month harmful/hazardous alcohol use (OR 1.38, 95 % CI:1.20,1.59).

Table 3 Current suicidal ideation (n = 104)

Characteristic	OR	95 % CI	p-value
Age (years)			
(base) 18–29	1.00		
30–39	0.95	0.77,1.17	0.613
40–49	1.12	0.92,1.38	0.263
50–55	1.11	0.88,1.40	0.370
Married/de facto	0.69	0.58, 0.81	0.000
Socio-economic index (quintile)			
(base) 1 (least disadvantage)	1.00		
2	1.09	0.87,1.35	0.456
3	0.90	0.73,1.11	0.330
4	0.97	0.78,1.21	0.819
5th quintile	0.73	0.58,0.93	0.010
Clinical factors			
Depression (12 month)	4.49	3.74,5.40	0.000
Anxiety (12 month)	1.27	1.02,1.57	0.025
Alcohol Harmful/Hazardous Use	1.38	1.20,1.59	0.000
Life Events (12 months)			
Serious personal injury	1.27	1.07,1.51	0.006
Relationship end	1.46	1.18,1.80	0.001
Family conflict	1.95	1.64,2.32	0.000
Difficulty finding work	1.95	1.65,2.39	0.000
Legal troubles	1.27	1.00,1.60	0.046
Loss of personal property	1.66	1.23,2.23	0.001

^aAustralian Bureau of Statistics, Socio-Economic Indexes for Areas - Index of Relative Socio-Economic Disadvantage

Stress-diathesis

Table 4 presents results of the analysis of additive effects of life stress and clinical elements potentially related to the diathesis for suicidal behaviour. For depression and life events, a strong additive effect was found, whereby co-occurrence of depression and a stressful life event in the past 12 months increased odds of experiencing suicidal ideation considerably (OR 10.3), compared to depression alone (OR 6.6) and life-event alone (OR 2.6). A smaller additive effect was found for both anxiety disorder and harmful/hazardous alcohol use and life events with higher odds for co-occurring disorder and life events compared to the disorder alone or life events alone.

Discussion

Suicidal behaviour

The rates of suicidal thoughts and behaviour in Ten to Men adult respondents are higher than reported in the 2007 National Survey of Mental Health and Wellbeing (NSMHWB), the benchmark population data collection on non-fatal suicidal thoughts and behaviours in adults in Australia. Lifetime suicidal ideation was reported by 18.8 % of Ten to Men adult respondents compared to 11.5 % of males in the NSMHWB, and lifetime suicide attempts were reported at more than twice the rate in Ten to Men adult respondents (5.4 % compared to 2.2 %) [14]. Likewise lifetime and 12 month depression

Table 4 Stress-diathesis Risk factors for suicidal ideation

MODEL	Adjusted OR	95 % CI	p-value
DEPRESSION ^a			
N	-1.8		

was reported more frequently in the Ten to Men adult cohort (depression: 20 % lifetime and 12.8 % 12 month) than in the NSMHWB (depressive episode: 8.8 % lifetime and 3.1 % 12 month) [14], although anxiety was less frequently reported (Ten to Men: 13.4 % lifetime and 8.8 % 12 month; NSMHWB: 20.4 % lifetime and 10.8 % 12 month) [14]. These differences in rates likely reflect methodological differences including the use of self-report questionnaires in Ten to Men versus face-to-face interview in the NSMHWB and the use of clinical interview to assess depression and anxiety in the NSHWBS compared to a general question about lifetime diagnosis in Ten to Men. While the study design aimed to obtain a representative sample and sample weights adjusting for age and region have been applied to the analysis [13], Ten to Men is not designed as a cross-sectional prevalence study but rather a longitudinal study aimed at investigating the causes of and pathways to health outcomes within individuals. As such, a cohort enriched for suicidal behaviour and psychiatric disorder offers greater scope to investigate the complex causality of suicidal behaviour.

Life stress and suicidal ideation

In the initial multivariable analysis, elements from both the stressor and diathesis domains increased risk for suicidal ideation. Depression, anxiety and alcohol use, all putative elements of the diathesis for suicidal behaviour, were associated with increased risk for suicidal ideation. Depression in the past 12 months was the most robust predictor with more than twice the effect size of any other risk factor in the model. In the stressor domain six

ideation. It also indicates a need for further research to identify predisposing factors in non-depressed males which may increase their vulnerability to suicidal ideation and behaviour when encountering fairly common life stressors in order to identify targets for prevention in this group.

Limitations

The outcome measure of suicidal ideation was drawn from a composite scale designed to assess depression rather than from a suicide assessment instrument and, as such, may lack specificity. Moreover, given that suicidal ideation is a symptom of depression, individuals who were positive for current depression

