Lifetime suicide risk in a representative cohort of World War I soldiers

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Introduction and objectives

“The whole nervous system of individuals changed during and since the War”
Dennis Gelfen, “The Causes of Suicide”
Transactions of the Medico-Legal Society, 1932.

World War I has long been argued to be an especially traumatic war for surviving soldiers. But, in comparison to recent conflicts there are few long-term studies of surviving soldiers’ mental health.

We follow a representative, prospective, cohort of World War I soldiers returned to civilian life to:
- Estimate lifetime suicide rates in a cohort of World War I returned soldiers
- Compare suicide rates from World War I to veteran suicide rates from more recent conflicts
- Estimate the impact of suicide on life expectancy

Measures and methods

We follow soldiers from 1920 to their deaths, and classify deaths to ICD-10 codes.

We calculate three key measures of the impact of suicide on the population:
- Suicides per 100,000 life years lived
- Potential years of life lost before age 50 & age 70
- Contribution of suicide to life expectancy change between cohorts exposed to war and later cohorts

Identifying suicides

New Zealand death certificates describe a “Primary cause of death” that is often just “ Suicide” for suicide cases. Another field provides greater detail including methods and evidence of intent.

Suicide occurred at young ages

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>All other causes</th>
<th>Suicide mortality rate</th>
<th>PYLL</th>
<th>Suicide mortality rate</th>
<th>PYLL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death &lt; 5 yrs</td>
<td>181</td>
<td>346</td>
<td>3564</td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td>Death &gt; 70 yrs</td>
<td>779</td>
<td>956</td>
<td>12208</td>
<td>31</td>
<td>38</td>
</tr>
<tr>
<td>Including potential suicides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death &lt; 5 yrs</td>
<td>171</td>
<td>326</td>
<td>3303</td>
<td>28</td>
<td>53</td>
</tr>
<tr>
<td>Death &gt; 70 yrs</td>
<td>762</td>
<td>936</td>
<td>11693</td>
<td>47</td>
<td>57</td>
</tr>
<tr>
<td>Total N (deaths)</td>
<td>1960</td>
<td></td>
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</tbody>
</table>

Suicide accounted for 10% of deaths before age 50 and 12.5% of years of life lost before age 50.

All suicides in the cohort occurred before age 70 (life expectancy conditional on surviving the war).

Potential suicides also occurred at young ages, together accounting for one in seven deaths among veterans before age 50.

High suicide rate in WWI veterans

Suicide rates in our cohort were much higher than similar “general population” cohorts from recent conflicts.

Contribution and conclusions

- First ever study to follow a representative cohort of WWII soldiers from conclusion of service to death.
- Suicide rates in WWII soldiers were extremely high in comparison to veterans of recent conflicts.
- Lifetime suicide rates in general population of WWII veterans similar to immediate post-conflict rates among most affected veterans of recent conflicts.
- Suicide had a significant impact on life expectancy of cohorts with high wartime service rates.

Longitudinal study

We select 2539 New Zealand soldiers who enlisted and served in World War I, and survived both the war and the 1919 influenza epidemic.

Baseline demographic & health information came from military files.

We link 74% (1896) to death certificates detailing cause of death.

Rich data on soldiers’ background and wartime experience

Service history sheets summarize exposure to combat and often note post-service deaths.