Evaluation of a novel approach to preventing railway suicides: the community stations project

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Abstract
Purpose – The purpose of this paper is to describe an evaluation of the Community Stations Project. The Community Stations Project was designed to address railway suicides in two ways: by improving the station environment in a manner that might improve community members’ feelings of wellbeing; and raising community members’ awareness of poor mental health and likelihood of reaching out to at-risk individuals. It involved four types of interventions (arts and culture, music, food and coffee, and “special events”) delivered at four stations in Victoria.
Design/methodology/approach – A short anonymous survey was administered to community members on iPads at the four participating railway stations during the implementation of the interventions (between October and December 2016). The survey included questions about respondents’ demographics, their awareness of the intervention(s), their views of the station, their attitudes towards people with poor mental health and their emotional wellbeing.
Findings – A total of 1,309 people took part in the survey. Of these, 48 per cent of community members surveyed reporting noticing an intervention at their station. Noticing the events was associated with positive views of the station, improved understanding of poor mental health, and a greater likelihood of reaching out to someone who might be at risk of poor mental health. Awareness of intervention events was not associated with respondents’ own emotional wellbeing.
Practical implications – Continuing to focus efforts on mental health awareness activities may further strengthen the impact of the Community Stations Project interventions and ultimately prevent suicides at railway stations.
Originality/value – This paper evaluates a novel approach to improving wellbeing and understanding of poor mental health in the train station environment.
Keywords Suicide prevention, Mental health, Emotional wellbeing, Community intervention, Rail suicide, Train station
Paper type Research paper

Introduction
In Victoria, suicide accounts for the majority of deaths on railway networks, with 17 per cent of Victorian railway suicides occurring at stations (Too et al., 2015). This equates to five suicides per year occurring in the station environment. These suicides have significant traumatic impacts for those who witness them, including train drivers, other railway staff and passengers and may result in diagnoses of acute or post-traumatic stress disorders (Bardon and Mishara, 2015; Limosin et al., 2006; Mishara, 2007; Clarner et al., 2015). They also cause economic losses through disruptions of train services, driver absenteeism and counselling required for affected railway staff (Mehnert et al., 2012). Rail suicides that occur in the station environment may also have more witnesses, which carries the potential for traumatic impact on larger numbers of people.

The World Health Organisation (2014) has argued for the essential role of the community in preventing suicide, with the importance of this role emphasised through inclusion of community-wide...
prevention in national suicide prevention strategies (Australian Government Department of Health and Ageing, 2007; UK House of Commons Health Committee, 2017). However, difficulties in measuring the efficacy of community-level interventions at reducing suicide have also been recognised, limiting the conclusions that can be drawn from evaluation studies (Turecki, 2016; Zalsman et al., 2016). With railway tracks identified as a “suicide hotspot”, it is recognised that there are four main intervention approaches to reduce suicide at hotspots: restricting access to means (through installation of physical barriers); encouraging help-seeking; increasing likelihood of intervention by a third party; and encouraging responsible media reporting of suicide (Cox et al., 2013; Pirkis et al., 2015). While the evidence for restricting access to means by installing physical barriers along railway tracks to reduce access to these is strong (Pirkis et al., 2013; Cox et al., 2013), the cost of this intervention can make it unfeasible. Alternatively, implementing interventions that encourage help-seeking and increase the likelihood of intervention by a third party may be more financially feasible to implement, with evidence suggesting that these are promising approaches (Pirkis et al., 2015).

A possible approach to reducing railway suicides utilises these approaches, involving community-based interventions that aim to improve community members’ understanding of poor mental health, their likelihood of reaching out to at-risk individuals, and their emotional wellbeing. A proposed programme logic matrix that may underpin these interventions is outlined in Figure 1. The hierarchy suggests that higher-level outcomes like decreasing suicide and suicide attempts are dependent upon lower-level impacts, and if lower-level outcomes can be achieved then the higher-level outcomes are likely to follow, even if they cannot be measured in an evaluation.

![Figure 1: Proposed hierarchy of objectives for decreasing suicide in a community station context](image-url)
Essentially, the hierarchy of objectives has two arms: one relating to improving community members’ knowledge, beliefs and attitudes towards people with poor mental health; and encouraging reaching out to others who may be at-risk of poor mental health. The other arm involves increasing wellbeing and social connectedness by altering the ambiance of stations and through the community nature of events.

To achieve the objectives of the hierarchy and to ultimately decrease suicide, a package of community-level interventions to improve understanding of poor mental health, likelihood of reaching out to at-risk individuals and wellbeing of community members was developed. These interventions included special mental health awareness-raising events, arts and cultural events, music events, as well as the provision of free food and coffee. Interventions related to the first arm involved special mental health awareness-raising events, aiming to improve community members’ understanding of mental health and reaching out to others who might be at-risk of poor mental health. These events involved promotions by local health services and mental health organisations, including Lifeline and community education units, as well as Australian Rotary Health’s Lift the Lid on Mental Illness (a national mental health fundraising and awareness day) and R U OK? Day (an Australian national day of action that encourages people to connect with and support those around them who may be struggling) (Mok et al., 2016) campaigns. In relation to the second arm, interventions aiming to improve social connectedness and wellbeing were implemented by the train networks and involved participation in arts and cultural events, and providing free food and drinks. Examples of these events include taking part in making murals and gratitude montages, watching drama performances, musical performances by buskers, community bands and singing groups, a playable piano, and providing free tea/coffee, cupcakes and sausage sizzles to community members. Intervention events took place at each station during either morning or afternoon peak times on weekdays, and during the day on some weekends, on most days over the intervention period.

As a community events approach to prevent railway suicides is a novel initiative, to the best of our knowledge, there is no evidence regarding the effectiveness of these interventions on suicide reduction. However, similar interventions have been applied in different settings, which provide some indication of the impact these interventions might be expected to have on mental health and wellbeing in a community context.

**Events aiming to improve understanding of mental health and suicide**

The research literature investigating the impact of interventions and campaigns that aim to improve the public’s awareness of poor mental health and knowledge of available supports is rapidly building. This improved awareness is increasing utilisation of effective self-help coping strategies and help-seeking for mental health concerns. Improved understanding of poor mental health has been found to be associated with decreased stigmatising attitudes, as well as increased recognition of mental health problems, help-seeking intentions and support offered to others (Jorm, 2000, 2012; Jorm et al., 2006; Kelly et al., 2007). Community-based depression-awareness campaigns have also been found to modestly improve community knowledge of and attitudes towards depression and suicide; however, the durability of these attitude changes is unknown (Dumesnil and Verger, 2009). Based on these findings, an intervention that acts to increase mental health awareness and knowledge in the community can be ultimately expected to increase self-help behaviours, increase support offered to others and increase appropriate help-seeking.

**Events aiming to improve wellbeing**

Active participation in community arts and cultural events, such as film and photography exhibitions, dance, film making, storytelling, mural creation, as well as other arts and crafts workshops, has been found to increase social connectedness and community engagement (Chung et al., 2009; Mohatt et al., 2013; Philipp et al., 2014). Studies have also shown that exposure to music that is self-selected or relatively gentle in tempo and tone, such as classical music, has been found to significantly reduce negative emotional states (including reduction in anxiety, depression and anger), enhance mood and sense of wellbeing (Labbé et al., 2007;
Furthermore, research findings also show that certain foods and drinks can have immediate psychological benefits and promote a sense of wellbeing. Dairy products, particular vegetables and particular bakery products have been linked to reported immediate improvements in mood (Geier et al., 2012), as well as described by respondents as “good for wellbeing” and to “make me feel good” (Ares et al., 2016). These findings suggest that conducting similar events in a community setting could be expected to bring about increases in community members’ perceived social connectedness and wellbeing.

The Community Stations Project

Concern about railway suicides led Public Transport Victoria, Metro Trains Melbourne and TrackSAFE Foundation to instigate a pilot project known as the Community Stations Project. Four stations across Melbourne, Australia, participated in the Community Stations Project. Working alongside the local councils and volunteer organisations, these stations implemented various interventions designed to improve wellbeing, understanding of poor mental health and help-seeking, aiming to ultimately decrease suicides at railway stations.

Aims of the evaluation

Overall, this study aimed to evaluate the impact of the Community Stations Project. The three specific aims were to investigate if the interventions:

1. Improved people’s views about the stations.
2. Improved people’s attitudes towards those with poor mental health.
3. Improved people’s self-rated emotional wellbeing.

Methodology

Survey design

A short anonymous survey was designed to be administered to community members (aged 18 and over) at the railway stations that were participating in the Community Stations Project. The survey, which took approximately two to three minutes to complete on an iPad, included questions about respondents’ demographics (gender, age group and how often they came to the station), and whether they had noticed any of the following public events at the stations: arts and culture, music, food and coffee, and awareness-raising events (special events). Those who had noticed the events were then asked to rate whether the events had affected their views about the station on a scale of 1–10 (1 = very negative, 10 = very positive). Those who noticed the “special events” were asked if these had improved their understanding of people with poor mental health or made them more likely to reach out to someone whom they thought might be at risk of poor mental health. All respondents were then asked to rate their own emotional wellbeing on a scale of 1–10 (1 = very poor, 10 = very good).

To encourage respondents to seek support for their emotional wellbeing if they rated their emotional wellbeing as low or if it was something they were concerned about, the following text was presented below the final question about wellbeing: “If you feel you want to talk to someone about your response to this question, please call Lifeline: 13 11 14 (toll-free)”.

Participants and data collection

Surveys were conducted at the four stations involved in the Community Stations Project over a six-week period, from mid-October to early December 2016. Two researchers visited each station for an average of two to four hours during the daylight hours of one weekday each week. Researchers aimed to conduct surveys at times that coincided with intervention activities being conducted at the station, and aimed to survey a minimum of 40 respondents per station visit.

Each researcher had an iPad with the survey questionnaire loaded onto it. Researchers randomly approached community members as they entered the station or as they were waiting on the
platform, offering some brief information about the survey and asking if they would be interested in participating. Community members who requested further information about the survey were provided with a copy of the project’s Plain Language Statement.

Community members who were interested in taking part were handed an iPad to provide their responses to the survey. Consent to participate in the project evaluation was sought at the beginning of the survey, and only those providing consent went on to view the survey questions. Researchers stood at a reasonable distance from participants to allow participants space to enter their responses confidentially. Those who reported being uncomfortable using an iPad were offered the option of having the researcher read the survey questions to them and enter responses for them.

**Data analysis**

Descriptive statistics were used to report the characteristics of respondents in terms of sex, age group and travel frequency, as well as the proportion of those who noticed an event and their view about the stations. A proportion test was utilised to evaluate the effect of “special events” on understating of poor mental health and reaching out to someone who might be at risk of poor mental health. Linear regression was used to assess the links between respondents’ exposure to the interventions and their own wellbeing.

**Ethics approval**

The evaluation was approved by The University of Melbourne’s Human Research Ethics Committee (HREC 1647684.1).

**Results**

Overall, 1,376 people indicated that they were interested in participating in the evaluation and were given the iPad to complete the questionnaire. Subsequently, 1,309 (95.1 per cent) consented to participate in the survey. Data from 51 respondents who did not provide complete responses were removed. Thus, surveys from a total of 1,258 respondents were included in the analysis.

Characteristics of respondents are presented in Table I. The gender distribution of respondents was evenly spread between males and females. Over half of respondents were aged below

<table>
<thead>
<tr>
<th>Table I</th>
<th>Characteristics of community members who participated in the survey</th>
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<tr>
<td></td>
<td>Characteristics</td>
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<tr>
<td>Sex</td>
<td>Male</td>
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<td>Female</td>
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<td></td>
<td>Other</td>
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<td></td>
<td>Rather not say</td>
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<tr>
<td>Age group</td>
<td>&lt; 25</td>
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<td></td>
<td>25-34</td>
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<td></td>
<td>35-44</td>
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<td>45-54</td>
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<td></td>
<td>55-64</td>
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<td></td>
<td>⩾65</td>
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<tr>
<td>Travel frequency</td>
<td>Every day</td>
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<tr>
<td></td>
<td>Monday to Friday</td>
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<td>Once a week</td>
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<td>Once a fortnight</td>
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<td>Once a month</td>
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<td>Once every few months</td>
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34 (56.6 per cent). Most respondents were frequent commuters, with 66.3 per cent of respondents travelling from the given station between five and seven days a week. The surveys were administered at four selected stations in a fairly similar proportion.

The proportion of respondents who noticed an event at the respective station, for each event type, is reported in Table II. About half of the community members surveyed reported to have noticed an event at their station, with coffee/food carts being the most noticed events at each station. Respondents who indicated that they had noticed an event at the station were then asked if the event influenced their view of the particular station. These findings are also presented in Table II. Overall respondents indicated that the events had a moderately positive impact on their view of the station.

Noticing a “special event” (including mental health awareness events) at the station was significantly associated with an improved understanding of people with poor mental health ($p = 0.009$) and an increased likelihood of reaching out to someone that participants thought might be at risk of poor mental health ($p < 0.001$). Table III presents these data.

Univariate regression analyses showed that noticing the events was not significantly associated with the self-rated wellbeing of respondents (coffee/food, $p = 0.999$; arts/cultural, $p = 0.764$; music, $p = 0.739$; special event, $p = 0.525$).

**Discussion**

This study aimed to assess the impact of the Community Stations Project interventions on community members’ views of the stations, their understanding of people with poor mental health, and their own emotional wellbeing. The findings indicate that the interventions increased positive views about the stations and improved understanding of people with poor mental health. However, the interventions were not found to have a direct impact on emotional wellbeing.

**Impact on views about the station**

Almost half of the community members surveyed reported noticing the interventions at the stations, and these people generally indicated that the interventions influenced them to view the station more positively. According to the programme logic matrix of the Community Stations Project, viewing the station more positively can be expected to improve social connectedness and emotional wellbeing, thus potentially acting to decrease risk of poor mental health and

<table>
<thead>
<tr>
<th>Event</th>
<th>n</th>
<th>Noticed event (%)</th>
<th>View influenced by event M(SD)</th>
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</thead>
<tbody>
<tr>
<td>Coffee/food</td>
<td>474</td>
<td>37.7</td>
<td>6.80 (2.19)</td>
</tr>
<tr>
<td>Arts/cultural</td>
<td>129</td>
<td>10.3</td>
<td>7.29 (2.13)</td>
</tr>
<tr>
<td>Music</td>
<td>242</td>
<td>19.2</td>
<td>6.98 (2.15)</td>
</tr>
<tr>
<td>Special event</td>
<td>65</td>
<td>5.2</td>
<td>6.85 (2.37)</td>
</tr>
<tr>
<td>None of the events</td>
<td>615</td>
<td>48.9</td>
<td>na</td>
</tr>
</tbody>
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<tr>
<th>Outcome</th>
<th>Yes n (%)</th>
<th>No n (%)</th>
<th>Significance of difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The event improved your understanding of people with poor mental health</td>
<td>38 (58.5)</td>
<td>27 (41.5)</td>
<td>0.009</td>
</tr>
<tr>
<td>The event made you more likely to reach out to someone who you thought might be at risk of poor mental health</td>
<td>42 (64.6)</td>
<td>23 (35.4)</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>
ultimately decrease suicide. Whether or not community members noticed the interventions may have been influenced by numerous factors, including the placement of the activities within the station. Most of the stations included in the project had numerous entrances, and therefore not all community members would have necessarily passed the intervention activities upon entering the station. For the events to have any impact on wellbeing or understanding poor mental health, it is important that these are noticeable to community members. Increased awareness may have been achieved through adequate signage, PA announcements and positioning events in high-foot traffic areas.

**Impact on knowledge about and attitudes towards poor mental health**

Community members reported improved understanding of poor mental health after being exposed to a “special event” at the station. They also reported being more likely to reach out to someone who they thought might be at risk of poor mental health following exposure to these interventions. This suggests that providing community members with further information on mental health problems, and advice on assisting someone they are concerned about, improves awareness and understanding of these problems and may prompt the offering of support to others and thus protect against suicide. This finding is consistent with extensive research by Jorm et al. (2000, 2006, 2012) showing that improving understanding and attitudes towards poor mental health promotes help-seeking and reaching out to others who might be at risk of poor mental health or suicide. These findings are also consistent with Dumesnil and Verger (2009) who found mental health awareness campaigns improve community knowledge of and attitudes towards people with poor mental health. As these awareness-raising events act to improve understanding of poor mental health, they may also further act to decrease suicide through increased help-seeking and support offered to others who might be experiencing poor mental health and may be at increased risk of suicide, and thus ultimately decreasing suicides.

**Impact on emotional wellbeing**

None of the different categories of interventions conducted at each of the four stations were found to have a direct impact on community members’ emotional wellbeing. As wellbeing is a complex concept that is influenced by a wide range of life domains, including social, economic, environmental, psychological, physical and spiritual (Felce and Perry, 1995), the interventions may not have had a sufficiently large effect on these domains to significantly impact wellbeing in this context. In order for these interventions to decrease suicide, based on the programme logic matrix, a positive impact on wellbeing was expected. Therefore, these findings were not consistent with the proposed programme logic.

Music and cultural/arts interventions described in past research that have been found to be successful at improving wellbeing have described participants’ exposure to the interventions, ranging from spending from 20 to 30 minutes listening to music, to participating in numerous exposures to intervention activities over a few hours (Labbé et al., 2007; Chan et al., 2009; Teo et al., 2015; Pearce and Lillyman, 2015). It is possible that limited exposure to the interventions in this project may have reduced their potential impact on wellbeing. Particularly during peak times at the stations, where trains arrive and depart at an increased frequency, community members spend minimal time at the station and thus limiting their exposure to events.

It is also possible that the attention of community members may have been focussed elsewhere while at the station (i.e. planning their train journey, looking at mobile phones) and may not be sufficiently focussed on activities occurring in the station environment. The research evidence describes that active participation in cultural and arts activities is what contributes to a sense of wellbeing and increased social connectedness (Chung et al., 2009; Mohatt et al., 2013; Philipp et al., 2014). The nature of participation in interventions in this project may have been too passive in nature, and not sufficiently engaging or sufficiently socially interactive to have a significant impact on wellbeing and social connectedness to ultimately decrease suicide at train stations. The train station environment, while being a community hub, may also be the type of transitional environment that is not conducive for interventions targeting wellbeing and social connectedness in this manner.
**Strengths and limitations**

This evaluation investigated the impact of a pilot intervention that aimed to increase social connectedness (by improving views about participating stations) and improve understanding of poor mental health and, in turn encourage help-seeking and improve emotional wellbeing, and ultimately prevent suicides in railway station setting. The researchers aimed, as much as possible, to conduct surveys at times when intervention activities were scheduled to run. Thus, the evaluation optimised the likelihood that those who were surveyed had been exposed to intervention events, facilitating the best possible opportunity to determine the impact of the interventions.

Some limitations of the evaluation must be acknowledged. First, as with all self-report surveys, the impact of social desirability needs to be considered. However, as the surveys were mostly completed on an iPad, researchers could not see any responses, and therefore limiting the influence of responding in a socially desirable pattern. Those who choose to verbalise their thoughts to the researcher while responding to the survey may have been the respondents most likely to have been influenced by social desirability. Second, a number of respondents asked about the meaning of “wellbeing” in the context of the study and varied ways of interpreting this concept may have influenced survey responses, possibly contributing to the insignificant impact of the interventions on emotional wellbeing. Third, with only 65 participants in this study noticing the special events, the sample size to evaluate the impact of these events was relatively small.

Additionally, the surveys were conducted at the beginning of the Community Stations Project, with the interventions starting only two to three weeks prior to the beginning of survey data collection, potentially reducing opportunities for exposure prior to being surveyed. Ideally, rather than a cross-sectional study design, a pre- and post-intervention design would have maximised exposure opportunities and have allowed a more thorough evaluation of the impact of the interventions. Due to the difficult nature of assessing the direct impact of the intervention on suicide, no outcome measure for suicide was utilised in this study which thereby limits conclusions regarding the ultimate effectiveness of the intervention at decreasing suicide in these communities. Also, including school-aged young people, who were outside the age range to participate in this evaluation and were often observed by the researchers to notice and interact with the interventions, may increase overall awareness.

**Implications**

Given the important role of the community in suicide prevention initiatives and the large number of people who visit train stations, more research is required to explore the effectiveness of such interventions in a train station environment. Investigation into specific suicide prevention messaging and the most effective delivery formats for this would guide future intervention efforts. Based on the current findings, engaging and concise messaging seems it would be most efficacious. Further, providing training to railway staff on assisting someone who may be at risk of poor mental health or suicide (such as Mental Health First Aid suicide prevention training) should be trialled and evaluated as an additional intervention avenue.

**Conclusions**

Evaluation findings suggest that the efforts being made to improve the station environments through the Community Stations Project are appreciated and valued by commuters who noticed the events. There is also some evidence to suggest that the mental health awareness events at train stations were effective at increasing awareness of poor mental health and increasing intentions to help someone who may be at risk of poor mental health. Combining mental health awareness events with other event categories, such as food or arts events, may also help to add interest and increase participation in these events and thus increase their positive impact to decrease rail suicides.
References


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