



Universal Suicide Prevention in Young People

An Evaluation of the safeTALK Program in Australian High Schools

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Abstract. *Background:* Universal education and awareness programs in schools are a promising suicide prevention intervention but to date no research has evaluated the iatrogenic effects of such programs. *Aims:* To evaluate the efficacy and acceptability of the safeTALK program for secondary school students and determine whether it is associated with any iatrogenic effects. *Method:* Participants were 129 students from the three main high schools in Alice Springs who attended the safeTALK training and consented to participate in the evaluation. Participants were assessed immediately before and immediately after the training using a purpose-designed survey. Follow-up questionnaires were administered online 4 weeks after completion of the training. *Results:* Participants demonstrated increases in knowledge about suicide, confidence in talking about issues related to suicide, willingness to talk about suicide, and likelihood of seeking help for suicidal thoughts. There was no evidence that the training induced suicidal thoughts or caused distress; in fact both appeared to decrease following the training. Most participants did not find the training upsetting; they reported the training to be worthwhile and most said that they would recommend it to a friend. *Limitations:* The lack of control group, use of non-validated measures, and relatively short follow-up period are limitations of this study. *Conclusion:* Universal suicide prevention workshops in schools can be beneficial and do not appear to be associated with iatrogenic effects.

Keywords: suicide, education, young people, schools, case detection

Suicide accounts for over a quarter of deaths among Australians aged between 15 and 24 years, with 362 suicides occurring in this group in 2014 (Australian Bureau of Statistics, 2016). This makes suicide the leading cause of death in this age group. Suicidal ideation and suicide attempts are even more common, with 7.5% of Australian young people reporting having considered suicide in the past 12 months and 2.4% having made an attempt (Lawrence et al., 2015). Despite the fact that suicide is a significant problem, there remains limited evidence regarding the effectiveness of suicide prevention interventions (Mann et al., 2005; Robinson & Pirkis, 2013).

Suicide prevention interventions can be classified as universal, selective, or indicated, depending on the target group (Silverman & Maris, 1995). Universal interventions target whole populations and include restricting access to means of suicide and school-wide education and awareness training. Selective interventions target vulnerable subgroups who may be at risk of suicide, such as people bereaved by suicide, and include gatekeeper training. Indicated interventions target those who are already displaying

suicidal behavior, and include psychological or pharmacological treatment. According to the World Health Organization, suicide prevention activities should incorporate multiple approaches in order to be most effective (World Health Organization, 2014).

Schools have been shown to be an acceptable setting for the delivery of suicide prevention interventions (Robinson et al., 2011), and universal education and awareness training programs for students have shown some promise as an intervention that might be offered in the school environment (Robinson et al., 2013). Generally these programs aim to enhance awareness of youth suicide, provide education about risk factors and warning signs, and teach students how and where to seek help for themselves or others (Cusimano & Sameem, 2011). A number of suicide prevention education programs have been developed and evaluated in school settings, such as the Signs of Suicide program (Aseltine & DeMartino, 2004) and Surviving the Teens® Suicide Prevention and Depression Awareness Program (King, Strunk, & Sorter, 2011). Other school-based suicide prevention programs incorporate universal educa-

tion and awareness workshops with selective and indicated interventions, such as gatekeeper training and screening. The Sources of Strength peer leadership program, for example, is a multimodal school-based suicide prevention program that includes training gatekeepers and peer leaders as well as delivering school-wide messaging, including regarding help-seeking (Wyman et al., 2010). Research has shown these programs increase students' knowledge, attitudes, and help-seeking intentions, and some are associated with reductions in suicidal ideation and behavior (Aseltine & DeMartino, 2004; Aseltine et al., 2007; King et al., 2011; Robinson et al., 2013; Wyman et al., 2010). One study found that a universal education and awareness program was more effective than gatekeeper training and screening in reducing severe suicidal ideation and suicide attempts (Wasserman et al., 2015).

Despite this, there is still a lack of research with regard to the efficacy and acceptability of suicide-specific education and awareness training programs. Moreover, historically concerns have existed regarding the potentially negative effects of such programs. For instance, it has been suggested that vulnerable students may be adversely affected by the program content (Robinson et al., 2013; Shaffer & Gould, 2000). Although several studies have shown that it is safe to include vulnerable young people in other types of suicide research (Gould et al., 2005; Robinson et al., 2011), to date no studies have tested the iatrogenic effects of these types of program (Robinson et al., 2013).

We had the opportunity to evaluate safeTALK (LivingWorks Australia, 2016b), a universal suicide prevention program that was being delivered to Australian schools, and examine its potential positive and iatrogenic effects. safeTALK is a 3-hr workshop that was developed by LivingWorks Education in 2006. In Australia, safeTALK is delivered in secondary schools in Alice Springs, Northern Territory. To date, however, no systematic evaluation of the training program in this context has been conducted.

The aim of the present evaluation was to examine the efficacy, acceptability, and safety of delivering safeTALK to Australian high school students. A secondary aim of the evaluation was to identify students potentially at risk for suicide and refer them to appropriate support. The following hypotheses were tested:

1. safeTALK is associated with increased knowledge about suicide, confidence in talking about issues related to suicide, willingness to talk about suicide (including offering and seeking help), and likelihood of seeking help for suicidal thoughts;
2. safeTALK is not associated with increases in suicidal ideation or psychological distress; and
3. safeTALK is acceptable to students (i.e., enjoyable and worthwhile).

Method

Study Design

A pretest/posttest design with a 4-week follow-up period was employed. Participants were assessed immediately before and immediately after the training using a specifically designed survey. Follow-up questionnaires were administered online 4 weeks after completion of the training.

Participants

The safeTALK program was delivered to all students in Years 11 and/or 12 (ages 16–18) at the three mainstream secondary schools in Alice Springs on four occasions in 2015 as part of the normal school curriculum. All students who attended the full training session and provided informed consent were eligible to participate in the evaluation. There were no other exclusion criteria.

Intervention

safeTALK was designed for those aged 15 years and older and aims to help participants: (a) recognize that warning signs of suicide are often overlooked; (b) move beyond common tendencies to miss, dismiss, and avoid suicide; (c) notice and respond to situations in which thoughts of suicide might be present, apply basic TALK steps (Tell, Ask, Listen, and KeepSafe); and (d) connect the suicidal person with suicide first aid help and further community resources. The training includes the use of presentations, video, discussion, questions, and role-play. A pocket card containing the suicide alert steps is also provided to participants at the end of the training.

The safeTALK workshops were delivered to groups of approximately 30 students at a time. Each student attended one workshop only. The workshops were facilitated by one safeTALK trainer and, for increased safety, staff members and school counselors who had undergone Applied Suicide Intervention Skills Training (ASIST; LivingWorks Australia, 2016a) were also present.

Although not subject to the current evaluation, safeTALK or ASIST was offered to all teaching staff at each school and parents and/or carers of participating students, prior to training students.

Measures

Participants were asked to complete a brief questionnaire on three separate occasions: immediately prior to the train-

ing (Time 1), immediately after the training (Time 2), and 4 weeks after the training (Time 3). These were designed to assess confidence, knowledge, willingness, and likelihood of help-seeking, as well as suicidal ideation, distress, and acceptability of the intervention. The questionnaires were specifically designed for this purpose but also contained an adapted version of the Columbia Suicide Screen (CSS; Shaffer et al., 2004) and one validated scale: the Profile of Mood States – Modified (POMS-M; Kalafat et al., 2007).

Demographic Information

Participants were asked to indicate their gender, school year, whether or not they identified as Aboriginal or Torres Strait Islander, whether or not they were born in Australia (and if not, where they were born), and whether or not English was the main language spoken at home (and if not, what language was spoken).

Knowledge

Knowledge of suicide was assessed using five items rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Items included: “I have the knowledge to recognize warning signs for suicide in myself”; “I have the knowledge to ask someone directly if they are thinking about suicide”; and “I have the knowledge to seek help for suicidal feelings.” The scores were summed to arrive at a total score, with higher scores indicating greater overall knowledge. The possible range for the scale was 5–25. Cronbach’s α in the present sample was 0.77.

Confidence

Similarly, confidence in discussing issues related to suicide was assessed using five items rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items are: “I would feel confident when it comes to recognizing warning signs for suicide in others”; “I would feel confident enough to ask someone directly if they are thinking about suicide”; and “I would feel confident enough to seek help for suicidal feelings.” The scores were summed to arrive at a total score with higher scores indicating greater overall confidence, with a possible range of 5–25. Cronbach’s α in the present sample was 0.76.

Willingness

Willingness to talk about suicide with others, help others, and to seek help was assessed using three items, also rated on a 5-point Likert scale and summed to achieve a total willingness score. The items were: “I would feel willing to talk about suicide with others”; “I would feel willing to ask someone directly if they are thinking about suicide”; and “I would be willing to seek help for suicidal feelings”. The possible range of the measure was 3–15, with higher scores indicating greater willingness to talk about suicide, help others, and help self. Cronbach’s α in the present sample was 0.60.

Help-Seeking

Help-seeking intentions were assessed using a single item (“Please indicate how likely you would be to seek help for a problem like suicidal feelings”) rated from 1 (*strongly disagree*) to 5 (*strongly agree*).

Profile of Mood States – Modified

The POMS is a self-report measure of psychological distress that has been widely used to measure transient mood states. The modified version of the POMS, developed by Kalafat et al. (2007), contains 14 items reflecting different mood states (e.g., worried, depressed, mixed up). Participants were required to rate how they were feeling “right now” using a 5-item scale ranging from *not at all* to *extremely*. The POMS-M is scored by summing the items, with higher scores indicative of greater distress. Cronbach’s α in the present sample was 0.90.

History of Suicidal Ideation and Behavior

History of suicidal ideation and behavior was assessed using a series of items derived from the CSS that have previously been used in a high school sample (Shaffer et al., 2004). Participants were asked if they had thought about killing themselves within the past 4 weeks and before the past 4 weeks. If a participant’s response to either question was *yes*, they were required to complete a series of follow-up questions, such as, “Did you think seriously about killing yourself?” and “Have you made a specific plan about how you would kill yourself?” They were also asked if they had ever tried to kill themselves, both within and before the past 4 weeks. Similarly, if they answered *yes* they were required to complete a series of follow-up questions, such as whether or not they actually hurt themselves

or needed medical attention, and whether or not their parents and friends knew about it.

Current Suicidal Ideation

Participants were also required to indicate the extent of suicidal thoughts they were experiencing “right now” on a 4-point scale ranging from 0 (*no thoughts of suicide*) to 3 (*severe thoughts of suicide with a specific plan and intent to act*). The analysis distinguished between those who were experiencing suicidal thoughts (scores between 1 and 3) and those who were not (scores of 0).

Program Acceptability

Questions regarding the acceptability of the program were asked at Time 2 only. Six items assessed (a) participants’ enjoyment of the training, (b) whether or not they found the training upsetting, (c) how well equipped they were to help their friends, (d) how well-equipped they thought their friends were to help them, (e) how worthwhile they thought the training was for students, and (f) whether or not they would recommend it to a friend. Response options varied according the question.

Case Detection

At each time point the completed questionnaires were screened immediately after completion for responses indicating that participants were potentially at risk. If participants endorsed any level of current suicidal ideation, or if they reported experiencing suicidal thoughts either within or before the past 4 weeks on the adapted version of the CSS, this information was passed to the school well-being team by the research assistant after completion of the second questionnaire. Participants were deemed to be at *higher* risk if they reported moderate or severe current suicidal ideation or reported a recent suicide attempt on the adapted CSS; these students were referred to the school well-being team for *same day* follow-up. If the well-being team was unable to follow up with these participants that same day, the research assistant conducted a risk assessment either face-to-face or over the phone. If the participant was at immediate risk of suicide, the research assistant would take one or more of the following actions according to the protocol: (a) take the participant to the well-being team for physical handover, (b) contact the participant’s parent or guardian and inform them of the risk, or (c) contact emergency services. However, no participants who were given a risk assessment were deemed

to be at immediate risk of suicide and these steps were not taken.

Participants were informed, both in the consent form and also verbally by the research assistant present, that their questionnaire responses would be checked and the school well-being team would be informed if there were any safety concerns. Where there were safety concerns, all possible steps were taken to preserve students’ confidentiality. For example, the handover of risk information between the research assistant and school counselor occurred in a private room away from other students and staff.

Data Analysis

Data were analyzed using Stata. For continuous outcomes (knowledge, confidence, willingness, help-seeking, and mood states), a linear mixed-effects model was used to assess changes in each outcome measure over time. The model was parameterized so that coefficients refer to mean scores at Time 1, Time 2, and Time 3 (by including terms for all three time points in the model but excluding the intercept term). The results presented include an unadjusted analysis, where the only predictor in the models was the variables representing the time period, and an adjusted analysis that also included covariates for gender, school year (11 or 12), Aboriginal or Torres Strait Islander status (*yes, no*), born in Australia (*yes, no*), and English being the main language spoken at home (*yes, no*). To test whether there was a change over time, post hoc testing was conducted to determine whether Time-2 scores differed from Time-1 scores, and whether Time 3 differed from Time 2. For the binary outcome, current suicidal ideation, the model was fit using a population-averaged generalized estimating equation. In this model, the coefficients (on the exponential scale) refer to the odds of experiencing current suicidal thoughts relative to the reference category (Time 1). The unadjusted and adjusted results for this outcome are also presented.

Logistic regression analyses were performed to determine if POMS score, having suicidal thoughts within or before the past 4 weeks, or having current suicidal ideation was related to finding the training upsetting.

Ethics

The evaluation received approval from the university’s Human Research and Ethics Committee (ID 339263).

Results

Participants and Demographic Characteristics of the Sample

There were 335 students in the year levels that were offered the training across the three schools. Of these, 220 students attended the safeTALK workshops (65%). In all, 135 participants consented to participate in the evaluation, giving a consent rate of 61%. Only participants who completed the baseline questionnaire were included in the analysis; 129 completed the questionnaires at Time 1 (84.9%). Of these, 122 completed the questionnaire at Time 2 (80.3%), and 100 at Time 3 (65.8%; see Figure 1). The main reason for participants not completing follow-up questionnaires was absence from school.

Just over half of the participants were male (53.49%) and the mean age was 16.7 years. Thirteen participants (10.1%) identified as Aboriginal or Torres Strait Islander and 106 participants (82.2%) said English was the main language spoken at home. There was no difference between students who did and did not participate in the evaluation by gender ($p = .784$) or by Aboriginal and Torres Strait Islander status ($p = .521$).

At baseline, one quarter (24.8%) of participants reported that they had thought about killing themselves *within*

the past 4 weeks and 28.7% had thought about killing themselves *before* the past 4 weeks. Of the participants, 14 (10.9%) reported that they had made a suicide attempt in their lifetime.

Knowledge, Confidence, Willingness, and Help-Seeking

In both the adjusted and unadjusted analysis (Table 1), knowledge, confidence, and willingness scores improved between Time 1 and Time 2 and remained constant at Time 3. There was also a significant increase in participants' intention to seek help for suicidal thoughts between Time 1 and Time 2; however, there was a small but significant decrease in these scores from Time 2 to Time 3.

Suicidal Ideation and Psychological Distress

In the adjusted analyses, there was some evidence that the odds of suicidal thoughts declined over time. In comparison with Time 1 (the reference category), individuals at Time 2 had 0.53 times the odds of experiencing suicidal thoughts (95% CI = 0.20–1.36), and at Time 3 had 0.30

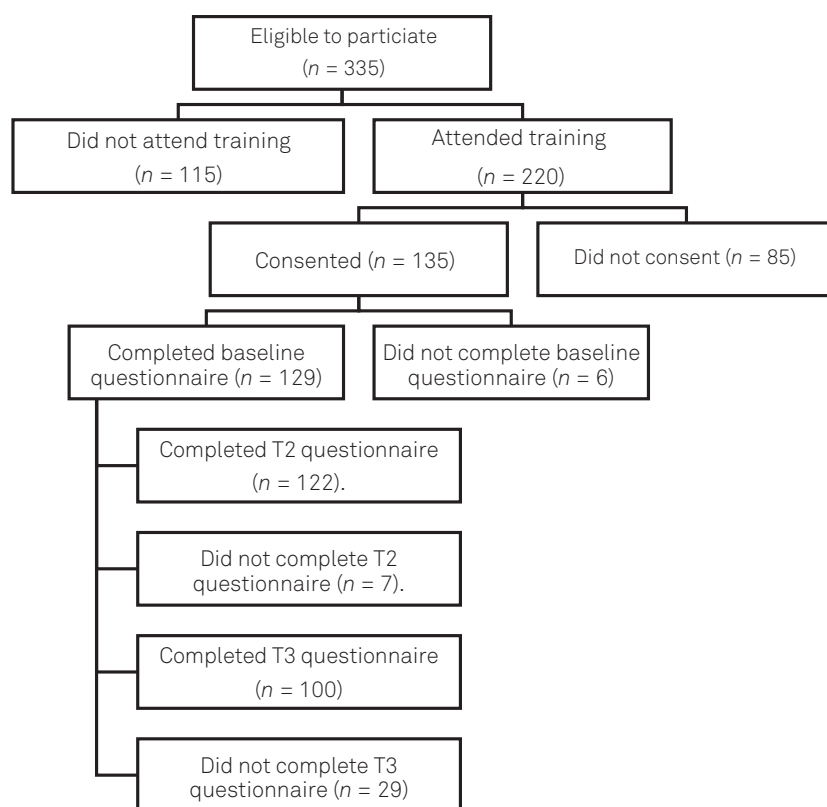


Figure 1. Participant flow diagram.

times the odds (95% CI = 0.10–0.91). The results for the unadjusted analyses were similar.

There was a significant decrease in POMS scores between Time 1 and Time 2; however, these scores significantly increased from Time 2 to Time 3 (Table 1).

Case Detection

At Time 1, 54 participants were identified as being potentially at risk. At Time 2, 12 participants were identified as being at risk; only one of these had not been identified at Time 1. In all, 21 participants were identified as being at risk at Time 3; only three of these had not been identified at either Time one or Time 2. Taken together, 58 individual participants (45% of the sample) were identified as being potentially at risk and were referred to the school well-being team.

Program Acceptability

The program acceptability questions were completed by 121 participants. Most participants ($N = 105$; 86.1%) rated

safeTALK as either somewhat or very enjoyable. The majority ($N = 92$; 75.4%) said the training was *not* upsetting at all, and 65% felt very prepared to help their friends after the training ($N = 79$). About half ($N = 60$; 49.2%) said that *their friends* were very well equipped to *help them*. The majority said the training was very worthwhile ($N = 84$; 68.9%) and that they would recommend it to others ($n = 105$; 86.1%).

There was weak evidence to suggest that having thoughts of suicide before the past 4 weeks was associated with finding the training upsetting (OR = 0.42, 95% CI = 0.18–0.99, $p = .047$). POMS score, presence of suicidal thoughts within the past 4 weeks, and current suicidal ideation were not associated with this outcome.

Discussion

Key Findings

To the best of our knowledge this study was the first to evaluate a suicide-specific education program, safeTALK, among Australian secondary school students.

Table 1. Mean scores for outcome variables at each time point based on unadjusted and adjusted multilevel linear regression model

	Unadjusted			Adjusted ^a		
	Mean	95% CI	p^b	Mean	95% CI	p^b
Knowledge						
Time 1	16.68	16.17–17.19	–	16.71	15.90–17.52	–
Time 2	20.88	20.36–21.41	< .0001	20.95	20.13–21.77	< .0001
Time 3	20.34	19.78–20.90	.07	20.44	19.59–21.29	.09
Confidence						
Time 1	16.20	15.64–16.76	–	15.97	15.05–16.89	–
Time 2	19.95	19.38–20.52	< .0001	19.69	18.76–20.62	< .0001
Time 3	19.46	18.85–20.06	.08	19.24	18.28–20.19	.11
Willingness						
Time 1	10.25	9.93–10.58	–	10.10	9.58–10.62	–
Time 2	11.97	11.63–12.30	< .0001	11.84	11.32–12.37	< .0001
Time 3	11.97	11.60–12.33	.10	11.83	11.28–12.38	.95
Help-Seeking						
Time 1	3.32	3.14–3.50	–	3.23	2.94–3.52	–
Time 2	3.83	3.65–4.02	< .0001	3.76	3.47–4.06	< .0001
Time 3	3.63	3.43–3.82	< .05	3.54	3.24–3.85	< .05
Profile of Mood States						
Time 1	24.42	22.85–26.00	–	21.45	18.86–24.04	–
Time 2	20.25	18.64–21.85	< .0001	17.22	14.61–19.83	< .0001
Time 3	22.65	20.96–24.34	< .01	19.54	16.86–22.21	< .01

Note. ^a Adjusted for gender, school year, Aboriginal or Torres Strait Islander status, country of birth, and main language spoken at home. ^b Tests the hypotheses that Time-1 scores differ from Time-2 scores, and that Time-2 scores differ from Time-3 scores.

Overall, participants demonstrated increases in knowledge about suicide, confidence in talking about issues related to suicide, willingness to talk about suicide (including offering and seeking help), and likelihood of seeking help for suicidal thoughts. These increases were evident at Time 2 and were generally sustained over the follow-up period. Additionally, there was no evidence that the training induced suicidal thoughts or caused distress; in fact suicidal ideation and distress both appeared to decrease during the course of the training session. Although psychological distress increased at Time 3, suicidal ideation remained constant. The majority of participants did not find the training upsetting; they reported it to be worthwhile and most said that they would recommend it to a friend.

A final component of the evaluation involved the identification of students at risk of suicide via key questions contained in the evaluation questionnaires they were asked to complete. This led to the identification of 58 potentially at-risk students, many of whom had not previously sought help. This represented just under half of the sample. These students were subsequently linked in with the school well-being team.

Taken together these findings indicate that delivering suicide prevention educational workshops directly to students appears to not only be effective and safe, but may also lead to the identification of vulnerable students who can subsequently be linked to appropriate support.

Limitations

When interpreting the findings from this evaluation the following limitations should be considered. First, the repeated measures design used means we cannot assume the participants' level of knowledge, confidence, or willingness, or their likelihood of help-seeking, truly changed as a result of the safeTALK training. In the absence of a control group for comparison, the effect detected could be a result of repeated testing rather than the training intervention. Second, the instruments used to measure knowledge, confidence, and willingness were designed for this study and their psychometric properties have not been evaluated. Although the internal consistency coefficients for the knowledge and confidence measures were considered acceptable, the coefficient for the willingness measure was low ($\alpha = 0.60$). As such, the finding that willingness improved should be interpreted with caution. Third, the sample consisted of students from three out of four high schools in Alice Springs, Central Australia. We also had a low response rate from young people who identified as being from an Aboriginal or Torres Strait Islander background. As a result the findings may not be generaliz-

able to other schools in Australia or internationally, or to young Aboriginal or Torres Strait Islander people. Fourth, the follow-up period used in this evaluation was 4 weeks, and longer-term outcomes such as change in the culture of the school over time were not assessed. Finally, only 65% of eligible students attended the training; this was largely attributed to the fact that one school offered the safeTALK workshops as part of an optional Year-12 school camp that was attended by less than 50% of the year level. Additionally, a large proportion of participants did not complete the Time-3 questionnaires due to their absence from school. As it is possible these groups of students are at higher risk of suicide, there may be selection bias in the sample.

Implications

Despite these limitations, this evaluation suggests that it is beneficial and safe to conduct suicide prevention education and awareness programs with Australian high school students. The findings also suggest that these programs can be effective in terms of promoting awareness and increasing knowledge and confidence around issues related to suicide, and may increase participants' likelihood of seeking help. The association between having thoughts of suicide prior to the past 4 weeks and finding the training upsetting, however, suggests that some students may be more negatively impacted by training than others. This is in line with a study by Shaffer and colleagues (1990), who found some evidence to suggest that students who had attempted suicide were more upset by suicide prevention curricula than students who had not. Caution should therefore be exercised when delivering programs of this nature. Finally, including a case detection component could lead to the identification of at-risk young people who do not otherwise seek help.

The percentage of students identified as being at potentially at risk was far higher than that found in previous research with secondary school students (Robinson et al., 2011). This is perhaps partially explained by differences in the criteria used to detect risk, which were broader in the present evaluation to ensure all potentially at-risk students were identified. The percentage of participants in the evaluation who endorsed experiencing suicidal ideation within the past 4 weeks (24.8%) was also higher than the percentage of Australians aged between 12 and 17 who have seriously considered suicide within the past year (7.5%; Lawrence et al., 2015). Similarly, 10.9% of participants in the evaluation reported having ever making a suicide attempt, compared with 3.2% of young Australians who report this (Lawrence et al., 2015).

The high rates of suicidal ideation may be partially explained by the fact that about 10% of the sample identi-

fied as Aboriginal or Torres Strait Islander, when Aboriginal and Torres Strait Islander people comprise only 3% of the Australian population (Australian Bureau of Statistics, 2013). Indigenous people in Australia and worldwide have notoriously high suicide rates (Australian Bureau of Statistics, 2016; Centers for Disease Control and Prevention, 2015; Health Canada, 2013; New Zealand Government, 2016) and little is known about effective suicide prevention interventions for these populations (Clifford, Doran, & Tsey, 2013; Harlow, Bohanna, & Clough, 2014). Due to the small sample size we were not able to determine the impact of the safeTALK training on the Aboriginal and Torres Strait Islander participants in the present evaluation. However, the overall results suggest safeTALK could be an effective and safe intervention for this population. More research is required to confirm this and to determine other effective interventions for young Indigenous peoples.

Future research should endeavor to overcome the aforementioned limitations by evaluating the safeTALK program in schools across a broader geographical area, using a comparison group, and employing a longer-term follow-up period.

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