

Preventing suicide in community and custodial settings: suicide awareness campaigns

[Evidence review for suicide awareness campaigns]

NICE guideline <number>

Evidence reviews

[February 2018]

Draft for Consultation

*These evidence reviews were developed
by Public Health Internal Guideline
Development team*

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ISBN:

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1 Suicide awareness campaigns

2 Introduction

3 This review provides evidence from studies of suicide prevention on the topic: local media
4 campaigns for suicide awareness. The aim of this review is to determine the effectiveness
5 and cost-effectiveness of awareness campaigns to help people reduce stigma associated
6 with suicidality, enable people to talk about suicidal thoughts and emotional distress and
7 increase their help-seeking behaviours.

8 Review question

9 Are local media, other awareness campaigns, including social media interventions and face-
10 to-face approaches effective at:

- 11 (1) Reducing stigma and enabling people to express suicidal thoughts and emotional
12 distress?
13 (2) Encouraging people who experience distress and crisis to seek help

14 PICO table

15 The review focused on identifying studies that fulfilled the conditions specified in PICO table
16 (Table 1). For full details of the review protocol, see Appendix A:

17 **Table 1: PICO inclusion criteria for the review question of suicide awareness**
18 **campaigns.**

Population	Whole population or subgroups
Interventions	Local suicide awareness campaigns and interventions including: <ul style="list-style-type: none">• Local media including social media• Face-to-face approaches (individual or group)• Instructor or peer approaches• Posters and leaflets
Comparator	Comparators that will be considered are <ul style="list-style-type: none">• Other intervention• Status quo/do nothing/control• Time (before and after)
Outcomes	The outcomes that will be considered when assessing the impact on health are: <ul style="list-style-type: none">• Suicide rates among target/participant communities• Suicide attempts• Changes in mental health state• Reporting of suicide ideation. The outcomes that will be considered when assessing help-seeking behaviour: <ul style="list-style-type: none">• Service uptake (such as mental health services, helplines) The outcomes that will be considered when assessing attitude and behaviour: <ul style="list-style-type: none">• Changes in knowledge, attitude, acceptance, intentions, beliefs and behaviour of people who are bereaved by suicide.

1 **Public Health evidence**

2 In total, 19,228 references were identified through the systematic searches. References were
3 screened on their titles and abstracts and 39 references that were potentially relevant to this
4 question were requested. 12 references reporting on 10 studies were included: 9 were
5 quantitative studies; and 1 qualitative study (see Appendix D: for the evidence tables) and 27
6 studies were excluded. For the list of excluded studies with reasons for exclusion, see
7 Appendix D:

8 **Findings**

9 **Summary of quantitative studies included in the evidence review**

10 9 quantitative studies provided evidence on the effectiveness of suicide awareness
11 campaigns. Table 2 presents a summary of included quantitative studies.

12

13

Table 2: summary of included quantitative studies for suicide awareness campaigns review

Study [country]	Design	Population	Intervention	Comparator	Outcome
Daigle et al 2006 [Canada]	Experimental	Men aged 20 to 40 years	Suicide prevention week (media campaign)	Exposed vs non-exposed men Before vs after suicide prevention week;	<ul style="list-style-type: none"> • Number of hospital admissions following a suicide attempt • Number of calls to suicide prevention centres • Attitude to seeking help
Jenner et al 2010 [USA]	Quasi-experimental	Residents of selected parishes in Louisiana	The Louisiana Partnership for Youth Prevention Suicide programme (a media campaign including bushboards, billboards, print ads in newspaper and radio Public Service Announcements)	Before and after media campaign	<ul style="list-style-type: none"> • Number of calls to hotline
Karras et al 2016 [USA]	RCT	Residents in 10 US cities	It's Your Call Campaign. A campaign to promote awareness and use of the Veterans Crisis Line (VCL) to veteran population.	Before vs after the campaign	<ul style="list-style-type: none"> • Daily average calls to the Veteran Crisis Line
Klimes-Dougan et al 2016; Klimes-Dougan and Lee 2010 [USA]	RCT	University students	Suicide Prevention Public Service Announcements (TV advertisement, billboard)	Types of media	<ul style="list-style-type: none"> • Normative beliefs about suicide • Attitude (help-seeking)
Oliver et al 2008 [USA]	Quasi-experimental	Residents in Cleveland and surrounding Cuyahoga county	Suicide awareness mass media campaign in Cuyahoga County. The campaign consisted of: <ul style="list-style-type: none"> • placards were placed on the bus; • poster placed inside the bus; billboard at strategic locations throughout the country; 	Before and after the campaign	<ul style="list-style-type: none"> • Number of suicide calls

			<ul style="list-style-type: none"> • posters displayed at shopping mall; • 15-second public announcement on air. 		
Ona et al 2013 [Japan]	Quasi-experimental	Community residents	Multimodal community intervention, including public media campaign as one of components	Before and after the invention	<ul style="list-style-type: none"> • Number of suicides, • Number of suicide attempts
Silk et al 2017 [USA]	Quasi-experimental	University students	Suicide prevention and help-seeking campaign using social norms approach	Intervention vs control	<ul style="list-style-type: none"> • Number of students who visited university counselling centre
Taylor et al 2016 [UK]	Observational (cross-sectional)	Population in England and Wales	A joint initiative between network rail, the UK charity Samaritans and other organisations aims to improve knowledge about suicide	Before and after the campaign	<ul style="list-style-type: none"> • Number of suicides
Till et al 2013 [Austria]	Quasi-experimental	Residents in Graz, Austria	Local multimedia awareness campaign "Reasons to love life"	Before and after the intervention	<ul style="list-style-type: none"> • Number of suicide related calls

1 Summary of qualitative study included in the evidence review

2 1 qualitative study was included in this review. The quality of the study was rated as [-] and
3 was targeted at suicide among men in Scotland. Table 3 presents a summary of this study.
4 Themes reported by authors of the study were listed.

5

6

Table 3: Included qualitative study for suicide awareness review

Study [country]	Design (method)	Population	Intervention	Aim of the study	Themes reported in the study
Robinson et al 2014; Robinson et al 2013	Qualitative (interviews)	20 key stakeholders (interviews) 10 discussion groups	Choose life campaign in North Lanarkshire (public awareness campaign)	Evaluation of Choose life in North Lanarkshire on preventing male suicides	<ul style="list-style-type: none"> • Attitudes and behaviour • Awareness • Engaging with the public as influence

1 **Economic evidence**

2 No economic study met inclusion criteria of the review.

3 **Evidence statement**

4 **Quantitative evidence**

5 ***Evidence statement 8.1-suicide***

6 Evidence from an experimental study found a non-statistically significant reduction in
7 suicide rates among Japanese community residents by 21%, the rate decreased
8 from 22.5 per 100,000 annually before a multimodal community intervention
9 programme to 17.9 per 100,000 after the implementation of the programme (relative
10 risk=0.79, [95%CI 0.61 to 1.03]; absolute difference=4.6 fewer per 100,00). The
11 committee's confidence in the evidence was low.

12 Evidence from an observational study showed an increase in suicide rates after the
13 introduction of media awareness campaign. Rates increased from 4.2 per million in
14 2000 to 5.4 per million in 2013 (relative risk=1.32, [95%CI 1.08 to 1.61], absolute
15 difference=1.2 more per million). The committee's confidence in the evidence was
16 moderate.

17 ***Evidence statement 8.2-suicide attempt***

18 Evidence from 2 experimental studies found a non-statistically significant reduction in
19 rates of attempted suicide amongst a community population by 15%, decreased from
20 11.3 per 100,000 before suicide awareness campaign to 9.6 per 100,000 afterwards
21 (relative risk=0.85, [95%CI 0.59 to 1.21]; absolute difference=1.7 fewer per 100,000).
22 The committee's confidence in the evidence was very low.

23 ***Evidence statement 8.3-suicidal ideation***

24 Evidence from 2 experimental studies found a non- statistically significant reduction
25 in rates of suicidal ideation reported by a community population by 13%, decreased
26 from 1.1 per 100,000 before suicide awareness campaign to 1.0 per 100,000
27 afterwards (relative risk=0.87, [95%CI 0.41 to 1.86]; absolute difference=0.1 fewer
28 per 100,000). The committee's confidence in the evidence was very low.

29 ***Evidence statement 8.4-help-seeking***

30 Evidence from 2 experimental studies showed a non- statistically significant
31 difference in the percentage of people who seek help after being exposed to
32 awareness campaign and those who were not exposed the campaign (relative
33 risk=1.19, [95%CI 0.86 to 1.63]). The committee's confidence in the evidence was
34 very low.

35 Evidence from an experimental study found a statistically significant decrease¹ in
36 rates of suicide call 60%, decreased from 1.65 per 100,000 before suicide
37 awareness campaign to 0.66 per 100,000 afterwards (relative risk=0.40, [95%CI
38 0.18 to 0.91]; absolute difference=1.0 fewer per 100,000). The committee's
39 confidence in the evidence was very low.

¹ The study discussed such a decrease, suggesting that the campaign did not reach the intended individual in crisis.

1 Evidence from an experimental study found a statistically significant increase in rates
2 of suicide-related call 30%, increased from 23.1 per 100,000² monthly before suicide
3 awareness campaign to 29.9 per 100,000 afterwards (relative risk=1.30, [95%CI
4 1.12 to 1.51]; absolute difference=6.8 more per 100,000). The committee's
5 confidence in the evidence was very low.

6 Evidence from an experimental study found an increase in the number of monthly
7 calls to the Lifeline from 262 before the suicide media campaign (year 2005) to 563
8 and 774 after the campaign in 2007 and 2008 respectively. On average, the hotline
9 received 1.6 more calls per post code in Louisiana during December 2008 than
10 received in February 2005. The committee's confidence in the evidence was very
11 low.

12 Evidence from one RCT study showed an increase in average daily calls to the
13 Veterans Crisis Line after the awareness campaign. In the areas with low-dose
14 campaign, one more call made to the Crisis line in every 6 people; in the areas with
15 high-dose campaign³, one more call made to the Crisis line in every 4 people. The
16 committee's confidence in the evidence was low.

17 **Evidence statement 8.5-belief: normative beliefs suicide**

18 Evidence from one RCT study found that billboard or TV ads had a non-significant
19 effect on people's normative beliefs about suicide ((billboard vs no information, mean
20 difference=0.05 lower⁴, [95%CI 0.33 lower to 0.23 higher]; TV ad vs no information,
21 mean difference=0.14 lower, [95%CI 0.41 lower to 0.13 higher]). The committee's
22 confidence in the evidence was low.

23 **Evidence statement 8.6-attitudes: help-seeking**

24 Evidence from one RCT study found that a billboard campaign had a significant
25 negative effect on people's attitude towards help-seeking (billboard⁵ vs no
26 information, mean difference=0.25 lower⁶, [95%CI 0.43 lower to 0.07 lower]) but
27 specific billboard⁷ had a significant positive effect on people's help-seeking attitudes
28 (alternative vs generic billboard, mean difference=0.19 higher, [95%CI 0.09 higher to
29 0.29 higher]). TV⁸ had a non-significant effect on people's attitude (TV ad vs no
30 information, mean difference=0.06 higher, [95%CI 0.13 lower to 0.25 higher]). The
31 committee's confidence in the evidence was low to moderate

² The rate is calculated based on 1,300,000 population in Cuyahoga County, Ohio in 2006.

³ Low-dose campaign consists of low-intensity messaging efforts implemented online. Advertisements were placed on websites that target veteran population and their lifestyle or interests as well as disseminated through social media. High-dose campaign, in addition to low-dose campaign material, this include campaign roadside billboard positioned in each city, public transportation, print advertisements in local newspaper, and the radio broadcast of the campaign's public service announcement being played in local movie theatres.

⁴ To evaluate normative perceptions of suicidal behaviour, participants were asked to estimate how common it is for people their age to kill themselves (suicide). Scores reflected their rating on a 6-point scale ranging from 0.01% to 50%. The lower score, the better normative beliefs about suicide.

⁵ Billboard is a large PowerPoint projection, with the message "Prevent suicide, Treat Depression-See you Doctor"

⁶ For help-seeking, participants were asked to rate on a 5-point scale (never to always) a number of help-seeking behaviour. The higher score indicated more likely to seek help from others.

⁷ Specific billboard was intended to motivate the viewer by being more personal, be stressing the benefits valued by intended audience that offset the costs of taking action, and by having the viewer consider the implicit directive of acting to save one's life. Specific billboard was also intended to decrease psychiatric jargon and avoid the possible stigma associated with the word "suicide".

1 Evidence from an experimental study found a non-significant effect on people's
2 attitude amongst those who were exposed and not exposed to suicide awareness
3 campaign (mean difference=0.17 higher, [95%CI 0.08 lower to 0.42 higher]). The
4 committee's confidence in the evidence was very low.

5 **Qualitative evidence**

6 ***Evidence statement 8.7-attitude***

7 There is evidence from a qualitative study which evaluated a suicide prevention
8 public awareness campaign - Choose Life, North Lanarkshire. The study explored
9 how the public campaign supported suicide prevention, and found that the campaign
10 improved men's attitude towards being open to talking about vulnerability, feeling low
11 or suicidal thoughts. Among those who were aware of the campaign, men described
12 an increased awareness that it was normal to feel "low", and to talk about their
13 emotions and mental health concerns.

14 **Recommendations**

15 **General suicide awareness raising**

16
17 These recommendations are for multi-agency partnerships.

18 1.5.1 Use sensitive language and tailor messages for the target group, when
19 planning suicide awareness activities.

20 1.5.2 Consider local activities to raise awareness of suicide risk and
21 prevention. In particular:

- 22 • Address common misconceptions, by emphasising that:
 - 23 – suicide is preventable
 - 24 – it is safe to talk about suicide
 - 25 – suicide is not inevitable.
- 26 • Make people aware of the wider impact of suicide; for example,
27 around 60 people may be affected by each death.
- 28 • Make people aware of the support available nationally and
29 locally.
- 30 • Take account of local trends, locations and methods that are
31 often used.
- 32 • Take into account socioeconomic deprivation, mental health
33 status cultural, religious, and social norms about suicide and
34 help-seeking behaviour.

1 1.5.3 Consider encouraging all employers to develop policies to raise suicide
2 awareness and provide support after a suspected suicide (for examples, see
3 Public Health England and Business in the Community's Toolkits for Reducing
4 the risk of suicide: a preventative toolkit for employers and Crisis management
5 in the event of a suicide).

6 **Suicide prevention campaigns**

7
8 1.5.4 Suicide prevention campaign messages should:

- 9 • be tested with the help of a sample of the target audience
- 10 • be action-oriented, for example, focus on how to get help
- 11 • encourage people in crisis to use local support services such as
12 primary care and peer-support groups
- 13 • be delivered in a way that meets the target audience's
14 preferences
- 15 • include displays at prominent locations, for example schools,
16 pharmacies and on public transport, custody suites and
17 reception areas, prison visit halls
- 18 • be regularly repeated and changed to keep the audience's
19 attention.

20 1.5.5 Use the same messages and time local campaigns to run at the same
21 time as existing national suicide prevention programmes.

22

23

24 **Research recommendations**

25 **1. What is the effectiveness and cost-effectiveness of targeted media** 26 **campaigns in preventing suicide?**

Criterion	Explanation
Population	People in the community
Intervention	Media campaigns targeted at specific high-risk groups or high-frequency locations
Comparator	Usual care or no intervention
Outcomes	Primary outcomes to include suicide-related outcomes (Suicides, attempted suicides and suicidal ideation)

	Secondary outcomes, to include mental health (for example, self-rated depression), service use and costs
Study design	Study designs could include cluster RCTs or other types of evaluation with the purpose of ascertaining the effectiveness and cost-effectiveness of targeted media campaigns at reducing suicide rates (primary outcome). It will also be important to gain public and staff feedback as part of any study so a mixed methods approach to include qualitative elements may also be appropriate
Timeframe	Studies would require sufficient follow up time to capture changes in suicide rates (ideally 12 months)

1
2 **2. What is the acceptability of different help-seeking options for people with different cultural background/ ethnic groups?**

Criterion	Explanation
Population	People in the community who are at risk of suicide from ethnic minority groups
Intervention	Not applicable
Comparator	Not applicable
Outcomes	Preference and experience of people using the service
Study design	Qualitative studies such as interviews (face to face, via telephone or online) and focus groups.
Timeframe	No specific timeframe

3
4 **3. What is the influence of social media among young people who have suicide ideation?**

Criterion	Explanation
Population	Young people in the community who have experienced suicide ideation
Intervention	Social media campaigns targeted at specific high-risk young people
Comparator	Usual care or no intervention
Outcomes	Primary outcomes to include suicide-related outcomes (Suicides, attempted suicides and suicidal ideation)
Study design	Study designs could include cluster RCTs or other types of evaluation with the purpose of ascertaining the effectiveness and cost-effectiveness of targeted social media campaigns at reducing suicide rates (primary outcome). It will also be important to gain public and staff feedback as part of any study so a mixed methods approach to include qualitative elements may also be appropriate.
Timeframe	No specific timeframe

5

1 Rationale and impact

2 Why the committee made the recommendations

3

4 Impact of the recommendations on practice

5

6 The committee's discussion of the evidence

7 Interpreting the evidence

8 *The outcomes that matter most*

9 The committee discussed the relative importance of the outcomes and agreed that
10 changes in rates of suicides, suicide attempts and suicidal ideation were the most
11 important outcomes for this review. Any reduction in suicide, suicide attempt or
12 suicidal ideation would make an important difference to prevent suicide.

13 Outcomes including the proportion of people who reported seeking help and call
14 rates to helplines were used as a proxy measure of service uptake. Other outcomes
15 including changes in attitude and beliefs were also considered relevant for evaluating
16 the effectiveness of a suicide awareness campaign. Improvement in attitudes for
17 help-seeking and reduction in stigma associated with suicide would encourage
18 people at risk of suicide to talk about their suicidal thoughts and to seek help
19 whenever feeling suicidality.

20 *The quality of the evidence*

21 The committee noted that 3 non-UK studies reported on suicide-related outcomes,
22 and the certainty of evidence was considered as 'very low'. The committee noted that
23 the evidence base was limited, with concerns around the accuracy of data
24 recording/reporting on these outcomes. The committee also agreed that there are no
25 standardised and validated scales for suicidal ideation so only self-reported
26 information was available further reducing the certainty in the findings for this
27 outcome.

28 Information on service uptake was reported in 4 uncontrolled observational studies.
29 The evidence base was at high risk of bias due to including selection bias,
30 misclassification bias and variations in the delivery of the campaign across targeted
31 areas (for example, the campaign was not active in all areas during the observation).
32 Additionally, the committee noted short observation or follow-up periods were used
33 when comparing some outcomes; for example, call rates to emergency telephone
34 services 3 months before and after the awareness campaign (Oliver et al 2008; Till et
35 al 2013),

36 One RCT study reported changes in normative beliefs about suicide and attitudes
37 towards help-seeking. The certainty of evidence varied by outcome from very low to
38 moderate with some concerns over generalisability as participants were recruited
39 from a single university (Klimes-Dougan et al 2010, 2016). Such university
40 populations may not be applicable to the target population of this review. Likewise,
41 one included qualitative study was specifically targeted at middle age men in a region
42 of Scotland, which also limited the generalisability of findings to populations of
43 interest in this review.

1 **Benefits and harms**

2 The committee agreed that limited evidence showed a direct beneficial effect of
3 suicide awareness campaigns. Although the evidence presented to the committee
4 suggested a reduction in rates of suicides, suicide attempts, and suicidal ideation in
5 the follow-up periods, these reductions were not statistically significant.

6 The committee discussed the evidence available on service uptake and noted some
7 uncertainty as one study showed an increase in the number of suicide related calls
8 made to the helpline (Oliver et al 2008) and another reported a negative effect (Till et
9 al 2013). Given the similarity in the size of study populations and utilisation of existing
10 emergency telephone services, the committee considered that a number of factors
11 could contribute to this variability in call rates, including seasonal change in people'
12 calls to helplines, media exposure of the helpline used in the campaign, and
13 characteristics of emergency telephone services (i.e. the length of time before the
14 line being set up in the area).

15 The committee also noted that both studies used a before and after design, and the
16 lack of control group could introduce variability in study findings. It was felt that future
17 research may be needed to understand the impact of suicide awareness campaigns
18 on this outcome

19 Despite the fact that there was little evidence of direct benefits of awareness
20 campaigns, indirect evidence showed that the suicide media campaigns had the
21 potential to improve people's attitude towards seeking help.

22 None of the included studies provided evidence on potential harms of awareness
23 campaigns. However the committee noted that some awareness campaigns were
24 targeted at specific population groups such as young people and men. The
25 committee considered that such campaigns may have potentially negative impacts
26 on other non-targeted populations. In extreme cases this may result in unintended
27 consequences such as an increase in the number suicides among those groups. The
28 committee suggested that local knowledge of high-risk populations and how best to
29 reach the high-risk populations should also be taken into consideration when
30 evaluating the impact of awareness campaigns.

31 **Cost effectiveness and resource use**

32 No health economic evidence was found and this review question was not prioritised
33 for health economic modelling. Possible resource use impacts were:

- 34 • Resource impact on health service use – potential for increase in help-
35 seeking behaviours with associated health /social care costs.
- 36 • Costs of setting up campaigns (tie in with different media such as radio, TV
37 and local agencies to set up billboard and poster, to distribute leaflets).

38 **Other factors the committee took into account**

39 In this review, only 1 RCT examined how different types of awareness campaigns
40 (billboard, TV advertisement) and the content (generic content; specific content)
41 influenced people's normative beliefs about suicide and their attitude toward help-
42 seeking. The committee agreed that there was limited evidence presented for
43 comparison of different types of campaigns covered in the review question, but
44 acknowledged that people may be more likely to seek help when the wording of
45 campaign message was seen as more personal. This was achieved in the study by

- 1 stressing the benefits valued by the target population and by steering people to rec-
2 consider.
- 3 The committee noted the emergence of social media in awareness campaigns but no
4 evidence was identified in the review.
- 5 The committee discussed targeting suicide awareness campaigns at specific high-
6 risk groups and agreed that campaigns should be accessible to a wide range of
7 populations including those who were showing any signs of suicidality. The
8 committee emphasised a need to raise awareness among those whose behaviour
9 and circumstances were associated with increased risks and to provide support for
10 them. Local audit was considered an important source of information to enable local
11 agencies in a partnership to gather information that could be used to ensure
12 campaigns achieve maximum impact. For example, if a local area has a particular
13 high-frequency site or method then this information could be used to adapt the
14 content of a campaign for that particular area.

1 Appendices

2 Appendix A: Review protocol

Component of protocol	Description
Review question	<p>Are local media, other awareness campaigns, including social media interventions and face-to-face approaches effective at:</p> <ul style="list-style-type: none"> • reducing stigma and enabling people to express suicidal thoughts and emotional distress? • encouraging people who experience distress and crisis to seek help?
Context and objectives	<p>To determine whether awareness campaigns are effective and cost effective at reducing stigma and enabling people to express suicidal thoughts and emotional distress and increasing help seeking behaviour.</p>
Participants/population	<p>Whole population or subgroups.</p>
Intervention(s)	<p>Local suicide awareness campaigns and interventions:</p> <ul style="list-style-type: none"> • local media including social media • face-to-face approaches (individual or group) • instructor or peer approaches • posters and leaflets. <p>Interventions would have a focus on:</p> <ul style="list-style-type: none"> • reducing the stigma around expressing suicidal thoughts and emotional distress • suicide prevention for people who experience a crisis and are in distress to seek help (this would include suicide ideation, or people who have attempted suicide). <p>Exclusion: mass media campaigns on national level</p>
Comparator(s)/control	<p>Comparators that will be considered are:</p> <ul style="list-style-type: none"> • Other intervention • Status quo/ control • Time (before and after) or area (i.e. matched city a vs b) comparisons
Outcome(s)	<p>The outcomes that will be considered when assessing the impact on health are:</p> <ul style="list-style-type: none"> • Suicide rates among target/participant communities • Suicide attempts • Changes in mental health state • Reporting of suicide ideation.

Component of protocol	Description
	<p>The outcomes that will be considered when assessing help-seeking behaviour:</p> <ul style="list-style-type: none"> • Service uptake (such as mental health services, helplines) <p>The outcomes that will be considered when assessing attitude and behaviour:</p> <ul style="list-style-type: none"> • Changes in knowledge, attitude, acceptance, intentions, beliefs and behaviour of people who are bereaved by suicide.
Types of studies to be included	<p>Comparative studies including:</p> <ul style="list-style-type: none"> • Randomised or non-randomised controlled trials • Before and after studies • Cohort studies <p>Qualitative studies (which are directly related to effectiveness studies)</p> <ul style="list-style-type: none"> • Interviews • Focus groups <p>Economic studies:</p> <ul style="list-style-type: none"> • Economic evaluations • Cost-utility (cost per QALY) • Cost benefit (i.e. Net benefit) • Cost-effectiveness (Cost per unit of effect) • Cost minimization • Cost-consequence <p>Systematic reviews will only be included if they have a high level of external validity to our research questions. They will also be used as a source for primary evidence.</p> <p>Only full economic analyses will be included – papers reporting costs only will be excluded.</p> <p>Qualitative studies which are linked to included comparative studies will be prioritised, if the volume of studies is high.</p>

1 For the full protocol see the attached version on the guideline consultation page

2

1 **Appendix B: Literature search** 2 **strategies**

3 See separate document attached on the guideline consultation page.

4 **Appendix C: References**

- 5 Daigle Marc, Beausoleil Louise, Brisoux Jacques, Raymond Sylvaine, Charbonneau
6 Lucie, and Desaulniers Julie (2006) Reaching suicidal people with media campaigns:
7 new challenges for a new century. *Crisis* 27(4), 172-80
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17 service announcements: Perceptions of young adults. *Crisis: The Journal of Crisis*
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- 19 Klimes-Dougan Bonnie, Wright Nathan, and Klingbeil David A (2016) Suicide
20 Prevention Public Service Announcements Impact Help Seeking Attitudes: The
21 Message Makes a Difference. *Frontiers in Psychiatry* 7,
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23 awareness to prevent male suicide. *Journal of Public Mental Health* 13(1), 40-50
- 24 Oliver R J, Spilsbury J C, Osiecki S S, Denihan W M, Zureick J L, and Friedman S
25 (2008) Brief report: Preliminary results of a suicide awareness mass media campaign
26 in Cuyahoga County, Ohio. *Suicide and Life-Threatening Behavior* 38(2), 245-249
- 27 Ono Yutaka, Sakai Akio, Otsuka Kotaro, Uda Hidenori, Oyama Hirofumi, Ishizuka
28 Naoki, Awata Shuichi, Ishida Yasushi, Iwasa Hiroto, Kamei Yuichi, Motohashi
29 Yutaka, Nakamura Jun, Nishi Nobuyuki, Watanabe Naoki, Yotsumoto Toshihiko, and
30 Nakagawa A (2013) Effectiveness of a multimodal community intervention program
31 to prevent suicide and suicide attempts: A quasi-experimental study. *PloS one* 8,
32 e74902
- 33 Robinson Mark, Braybrook Debbie, and Robertson Steve (2013) 'Talk' about male
34 suicide? Learning from community programmes. *Mental Health Review Journal*
35 18(3), 115-127
- 36 Silk Kami J, Perrault Evan K, Nazione Samantha A, Pace Kristin, and Collins-Eaglin
37 Jan (2017) Evaluation of a Social Norms Approach to a Suicide Prevention
38 Campaign. *Journal of health communication* 22(2), 135-142
- 39 Taylor Anna K, Knipe Duleeka W, and Thomas Kyla H (2016) Railway suicide in
40 England and Wales 2000-2013: a time-trends analysis. *BMC public health* 16, 270

1 Till Benedikt, Sonneck Gernot, Baldauf Gerhard, Steiner Elise, and
2 Niederkrotenthaler Thomas (2013) Reasons to love life. Effects of a suicide-
3 awareness campaign on the utilization of a telephone emergency line in Austria.
4 Crisis 34(6), 382-9

5

6

7 Appendix D: Excluded studies

No.	Study	Reason for exclusion
1.	Acosta Joie, Ramchand Rajeev, and Becker Amariah (2017) Best Practices for Suicide Prevention Messaging and Evaluating California's "Know the Signs" Media Campaign. Crisis , 1-13	Outcomes of interest not included
2.	Dumesnil H, and Verger P (2009) Public awareness campaigns about depression and suicide: A review. Psychiatric Services 60(9), 1203-1213	Not a systematic review, and included studies checked against review protocol
3.	Ftanou Maria, Cox Georgina, Nicholas Angela, Spittal Matthew J, Machlin Anna, Robinson Jo, and Pirkis Jane (2017) Suicide Prevention Public Service Announcements (PSAs): Examples from Around the World. Health communication 32(4), 493-501	Outcomes of interest not included
4.	Hagihara Akihito, and Abe Takeru (2012) Effects of media reports and the subsequent voluntary withdrawal from sale of suicide-related products on the suicide rate in Japan. European archives of psychiatry and clinical neuroscience 262(3), 245-51	Intervention is not consider to be a suicide awareness campaign
5.	Hoven Christina W, Wasserman Danuta, Wasserman Camilla, and Mandell Donald J (2009) Awareness in nine countries: a public health approach to suicide prevention. Legal medicine (Tokyo, and Japan) 11 Suppl 1, S13-7	Data were at a national level, and no baseline data were reported in the study
6.	King Keith A, Strunk Catherine M, and Sorter Michael T (2011) Preliminary effectiveness of surviving the teens suicide prevention and depression awareness program on adolescents' suicidality and self-efficacy in performing help-seeking behaviours. The Journal of school health 81(9), 581-90	Intervention is not consider to be a suicide awareness campaign
7.	Klimes-Dougan Bonnie, Klingbeil David A, and Meller Sarah J (2013) The impact of universal suicide-prevention programs on the help-seeking attitudes and behaviors of youths. Crisis: The Journal of Crisis Intervention and Suicide Prevention 34(2), 82-97	Intervention is not consider to be a suicide awareness campaign
8.	Knox Kerry L, Litts David A, Talcott Wayne G, et al (2003) Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: Cohort study. BMJ: British Medical Journal 327(7428), 1376-1378	Multi-component intervention, with no suicide awareness campaign component.

No.	Study	Reason for exclusion
9.	Mann J J, Apter A, Bertolote J, Beautrais A, et al (2005) Suicide prevention strategies - A systematic review. <i>Jama-Journal of the American Medical Association</i> 294(16), 2064-2074	Systematic review, and included studies checked against review protocol
10.	Michel K, Frey C, Wyss K, and Valach L (2000) An exercise in improving suicide reporting in print media. <i>Crisis</i> 21(2), 71-9	Intervention is not consider to be a social awareness campaign
11.	Miller David N, Eckert Tanya L, and Mazza James J (2009) Suicide prevention programs in the schools: A review and public health perspective. <i>School Psychology Review</i> 38(2), 168-188	Intervention is not consider to be a suicide awareness campaign
12.	Milner Allison, Page Kathryn, Spencer-Thomas Sally, and Lamotagne Anthony D (2015) Workplace suicide prevention: a systematic review of published and unpublished activities. <i>Health promotion international</i> 30(1), 29-37	Systematic review, and included studies checked against review protocol
13.	Mishara Brian L, and Martin Normand (2012) Effects of a comprehensive police suicide prevention program. <i>Crisis</i> 33(3), 162-8	Target population is not whole population
14.	Motohashi Yutaka, Kaneko Yoshihiro, and Sasaki Hisanaga (2007) A Decrease in Suicide Rates in Japanese Rural Towns after Community-Based Intervention by the Health Promotion Approach. <i>Suicide and Life-Threatening Behavior</i> 37(5), 593-599	Intervention is not consider to be a suicide awareness campaign
15.	Ramchand Rajeev, Roth Elizabeth, Acosta Joie, and Eberhart Nicole K (2015) Adults Newly Exposed to "Know the Signs" Campaign Report Greater Gains in Confidence to Intervene with Those Who Might Be at Risk for Suicide Than Those Unexposed to the Campaign. <i>Rand health quarterly</i> 5(2), 8	Outcomes of interest not included
16.	Robinson Jo, Cox Georgina, Malone Aisling, Williamson Michelle, Baldwin Gabriel, Fletcher Karen, and O'Brien Matt (2013) A systematic review of school-based interventions aimed at preventing, treating, and responding to suicide-related behaviour in young people. <i>Crisis: The Journal of Crisis Intervention and Suicide Prevention</i> 34(3), 164-182	Systematic review, and included studies checked against review protocol
17.	Robinson Jo, Cox Georgina, Bailey Eleanor, Hetrick Sarah, Rodrigues Maria, Fisher Steve, and Herrman Helen (2016) Social media and suicide prevention: a systematic review. <i>Early intervention in psychiatry</i> 10(2), 103-21	Systematic review, and included studies checked against review protocol
18.	Silverman Yehudit, Smith Fiona, and Burns Mary (2013) Coming together in pain and joy: A multicultural and arts-based suicide awareness project. <i>The Arts in Psychotherapy</i> 40(2), 216-223	Outcomes of interest not included
19.	Sisask Merike, and Varnik Airi (2012) Media roles in suicide prevention: a systematic review. <i>International journal of environmental research and public health</i> 9(1), 123-38	Systematic review, and included studies checked against review protocol

No.	Study	Reason for exclusion
20.	Slaven Janine, and Kisely Stephen (2002) The Esperance primary prevention of suicide project. The Australian and New Zealand journal of psychiatry 36(5), 617-21	Intervention is not consider to be a suicide awareness campaign
21.	Song In Han, You Jung-Won, Kim Ji Eun, Kim Jung-Soo, Kwon Se Won, and Park Jong-Ik (2017) Does a TV Public Service Advertisement Campaign for Suicide Prevention Really Work?. Crisis 38(3), 195-201	Mass national campaign
22.	Strunk Catherine M, Sorter Michael T, Ossege Julianne, and King Keith A (2014) Emotionally troubled teens' help-seeking behaviours: an evaluation of surviving the Teens suicide prevention and depression awareness program. The Journal of school nursing : the official publication of the National Association of School Nurses 30(5), 366-75	Intervention is not consider to be a suicide awareness campaign
23.	Vasiliadis Helen-Maria, Lesage Alain, Latimer Eric, and Seguin Monique (2015) Implementing Suicide Prevention Programs: Costs and Potential Life Years Saved in Canada. The journal of mental health policy and economics 18(3), 147-55	Multi-component intervention, with no suicide awareness campaign component.
24.	Walrath Christine, Garraza Lucas Godoy, Reid Hailey, Goldston David B, and McKeon Richard (2015) Impact of the Garrett Lee Smith youth suicide prevention program on suicide mortality. American journal of public health 105(5), 986-93	Multi-component intervention, with no suicide awareness campaign component.
25.	Wasserman D, Carli V, Wasserman C, Apter A, et al (2010) Saving and empowering young lives in Europe (SEYLE): a randomized controlled trial. BMC public health 10, 192	Study protocol
26.	Wasserman C, Hoven C W, Wasserman D, et al (2012) Suicide prevention for youth--a mental health awareness program: lessons learned from the Saving and Empowering Young Lives in Europe (SEYLE) intervention study. BMC public health 12, 776	No baseline data
27.	Wasserman D, Hoven C W, Wasserman C, et al (2015) School-based suicide prevention programmes: The SEYLE cluster-randomised, controlled trial. Lancet 385(9977), 1536-44	Intervention is not consider to be a suicide awareness campaign

1

Appendix E: Evidence tables

E.1 Quantitative studies

E.1.1 Daigle et al 2006

Daigle Marc, Beausoleil Louise, Brisoux Jacques, Raymond Sylvaine, Charbonneau Lucie, and Desaulniers Julie (2006) Reaching suicidal people with media campaigns: new challenges for a new century. <i>Crisis</i> 27(4), 172-80																			
Study details	Research Parameters	Population / Intervention	Results																
<p>Author/year</p> <p>Daigle et al 2006</p> <p>Quality score</p> <p>-</p> <p>Study type</p> <p>Experimental</p> <p>Aim of the study</p> <p>To evaluate the impact of 3 subsequent suicide prevention weeks (1999-2001) on knowledge, attitudes, and intentions; behaviour; unintended negative effects and exposure.</p>	<p>Number of participants</p> <p>Knowledge, attitudes, and intentions</p> <p>N=1,020</p> <p>Exposed to SPW: 190 (18.6%)</p> <p>Non-exposed to SPW: 830 (81.4%)</p> <p>Behaviour</p> <p>Not reported</p> <p>Unintended negative effect</p> <p>Not reported</p> <p>Exposure</p> <p>Not reported</p>	<p>Intervention / Comparison</p> <p>Intervention:</p> <p>Suicide prevention week aimed at evaluating at changing the behaviours of suicide individuals and, at the same time, the public will.</p> <p>Comparison:</p> <p>Intervention vs control (exposed to intervention vs non-exposed to intervention)</p>	<p>Primary outcomes</p> <p>Knowledge, attitudes, and intentions</p> <p>A questionnaire was developed specifically for the project comprised 6 questions regarding the knowledge that supposed to be conveyed by the media and the promoters during the SPW; 28 questions on attitudes regarding the right to commit suicide, expressing pain and intentions to seek help before a suicidal act.</p> <table border="1"> <thead> <tr> <th>Mean score (SD)</th> <th>Exposed to SPW (n=190)</th> <th>Non-exposed SPW</th> <th>Effect</th> </tr> </thead> <tbody> <tr> <td>Knowledge</td> <td>0.76 (0.30)</td> <td>0.68 (0.36)</td> <td>0.08 (0.03, 0.13)</td> </tr> <tr> <td>Attitude</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Suicide forbidden</td> <td>5.03 (1.1)</td> <td>5.13 (1.82)</td> <td>-0.10 (-0.30, 0.10)</td> </tr> </tbody> </table>	Mean score (SD)	Exposed to SPW (n=190)	Non-exposed SPW	Effect	Knowledge	0.76 (0.30)	0.68 (0.36)	0.08 (0.03, 0.13)	Attitude				Suicide forbidden	5.03 (1.1)	5.13 (1.82)	-0.10 (-0.30, 0.10)
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Attitude																			
Suicide forbidden	5.03 (1.1)	5.13 (1.82)	-0.10 (-0.30, 0.10)																

<p>Location and setting</p> <p>Quebec, Canada</p> <p>Length of study</p> <p>3 subsequent suicide prevention weeks (119-2001)</p> <p>Source of funding</p> <p>Quebec Health and Social Services.</p>	<p>Characteristics of participants</p> <p>The evaluation focused on the annual SPWs held in 1999-2001 to target men aged 20 to 40 years in the province of Quebec.</p> <p>Inclusion criteria</p> <p>Not reported</p> <p>Exclusion criteria</p> <p>Not reported</p>		<table border="1" data-bbox="1447 272 2022 472"> <tr> <td>Expressing pain</td> <td>7.3 (1.45)</td> <td>7.33 (1.57)</td> <td>-0.03 (-2.09, 2.03)</td> </tr> <tr> <td>Help-seeking</td> <td>7.23 (1.58)</td> <td>7.06 (1.61)</td> <td>0.17 (-0.08, 0.42)</td> </tr> </table> <p>There were a few more exposed subjects (67%) than non-exposed subjects (63.7%) who had the intention of seeking help if they ever became suicidal, but the difference was not significant (RR=1.05, 0.94 to 1.17).</p> <p>Behaviour</p> <p>Number of visors to the CRISE Document centre</p> <p>The data collected before, during and after the SPW showed no significant increase in the number of visitors or of requests for documentation at the CRISE over the course of the SPWs in 1999, 2000 or 2001.</p> <p>Number of calls to suicide prevention centre (2000, 2001)</p> <p>For 2000, a certain increase was registered in the number of calls during SPW. However, when the first 90 days of 2000 were taken as the point of reference, the time-series analyses did not really indicate a significant increase (B=0.29, p>0.05) in call as of the beginning of the SPW. For 2001, also, the analyses revealed no significant difference (B=0.19, p>0.05).</p> <p>Number of hospital admissions following a suicide attempt (2000, 2001)</p> <p>The time-series analyses indicated no significant difference in the number of hospital admissions following a suicide attempt. This was true for the total for both sexes combined in 2000 (B=2.98; p>0.05) and 2001 (B=1.07, p>0.05), but also for me alone in 2000 (B=0.98, p>0.05) and 2001 (B=0.23, p>0.05).</p> <p>Number of Suicide in Quebec (1999, 2000)</p>	Expressing pain	7.3 (1.45)	7.33 (1.57)	-0.03 (-2.09, 2.03)	Help-seeking	7.23 (1.58)	7.06 (1.61)	0.17 (-0.08, 0.42)
Expressing pain	7.3 (1.45)	7.33 (1.57)	-0.03 (-2.09, 2.03)								
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			<p>The daily number of suicide for 1999 and 2000 was obtained from the database for the Coroner's Bureau. The time-series analyses showed no decline in suicide in Quebec as of the beginning of the SPW in 1999 and 2000. The same held true for rate variations for the two sexes combined in 1999. And 2000. Rate variations did not prove significant for men in 1999 (B=1.02, p>0.05) or 2000 (B=1.05, p>0.05). The same held true for rate variations for the two sexes combined in 1999 (B=1, p>0.05) and 2000 (B=1.06, p>0.05).</p> <p>Unintended negative effect</p> <p>Psychological distress (2000)</p> <p>14.6% of the men surveyed in the pre-test presented a high level of psychological distress. In the post-test, the rate fell to 14.1% but this was not statistically significant.</p> <p>Suicide ideation</p> <p>No difference in men surveyed before and after SPW 2000. Only 0.6% of the men in both cases reported such thoughts.</p> <p>Suicide attempt</p> <p>No difference in men surveyed before and after SPW 2000. Only 0.2% of the men in both cases responded affirmatively.</p> <p>Author's conclusion</p> <p>SPW managed to improve knowledge of suicide prevention in the few men who were truly exposed to it. The same cannot be said for their attitudes and intentions to seek help. The behaviours of individuals are even harder to change with a campaign of such low intensity.</p>
<p>Limitations identified by author Not reported</p> <p>Limitations identified by review team Baseline characteristics of men who were surveyed were not reported; Accuracy of data of data reporting;</p>			

E.1.2 Jenner et al 2010

Jenner Eric, Jenner Lynne Woodward, Matthews-Sterling Maya, Butts Jessica K, and Williams Trina Evans (2010) Awareness effects of a youth suicide prevention media campaign in Louisiana. <i>Suicide & life-threatening behaviour</i> 40(4), 394-406																													
Study details	Research Parameters	Population / Intervention	Results																										
<p>Author/year Jenner et al 2010</p> <p>Quality score -</p> <p>Study type Experimental</p> <p>Aim of the study The study data are part of a larger evaluation of the effectiveness of the Louisiana Partnership for Youth Prevention Suicide program. To examine the effect of the awareness campaign to determine if there is empirical evidence of raised awareness of the hotline in regions and time when the campaign is active.</p> <p>Location and setting Louisiana, USA</p> <p>Length of study 47 months (2005-2008)</p>	<p>Number of participants 266 ZIP codes</p> <p>Characteristics of participants Not reported</p> <p>Inclusion criteria Not reported</p> <p>Exclusion criteria Not reported</p>	<p>Intervention / Comparison Intervention: The Louisiana Partnership for Youth Prevention Suicide program (LPYSP) campaign was designed to raise awareness of youth suicide and the resources available to those in need. The campaign was launched in the fall of 2007 and another in the fall of 2008. During the first year, the campaign included busboards, billboards, print ads in newspapers, and radio Public Service Announcements (PSAs). For the first year the campaign, messages targeted the general public, with the exception of the radio PSAs. 2 PSAs aired on radio stations that report large adolescent audiences, both PSAs were 30 seconds in length and advocated black-and-white newspaper advertisement that contained the message "Youth Suicide: There is Hope...If You or Someone You Know Is Suicidal, call 1-800-273-TALK." The billboard and bushboards contained the same message as the print advertisement. During the first year, the campaign included busboards, billboards and movie theatre Public Service Announcements (PSAs).</p>	<p>Primary outcomes Media campaign data were obtained from Mental Health America of Louisiana on a monthly basis. These data identify basic exposure information for each specific campaign component, including the specific media. Call centre data were obtained from Lifeline including each call to the hotline from Feb 2005 to Jan 2008. There were a total of 24,602 calls made to the hotline over 47-month period captured in the Lifeline dataset.</p> <table border="1"> <thead> <tr> <th></th> <th>2005</th> <th>2006</th> <th>2007</th> <th>2008</th> </tr> </thead> <tbody> <tr> <td>Monthly number of calls</td> <td>262</td> <td>474</td> <td>563</td> <td>774</td> </tr> </tbody> </table> <p>Estimates of exposure effects of advertising campaign on monthly call volume to Lifeline</p> <table border="1"> <thead> <tr> <th></th> <th>β</th> <th>SE</th> <th>t</th> </tr> </thead> <tbody> <tr> <td>Intercept</td> <td>-2.011</td> <td>0.590</td> <td>-3.41</td> </tr> <tr> <td>Time (month counter)</td> <td>0.034</td> <td>0.007</td> <td>4.99</td> </tr> <tr> <td>Population (level 2)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		2005	2006	2007	2008	Monthly number of calls	262	474	563	774		β	SE	t	Intercept	-2.011	0.590	-3.41	Time (month counter)	0.034	0.007	4.99	Population (level 2)			
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<p>Source of funding</p> <p>SAMHSA Garrett Lee Smith State/Tribal Youth Suicide Prevention grant.</p>		<p>The campaign included cinema advertising in the second year of the initiative in an attempt to directly target youth.</p> <p>Every advertisement contained the Lifeline hotline number.</p> <p>Comparison:</p> <p>The study compares media campaign impacts across ZIP codes and parishes where the campaign was active with comparison parishes where it was not conducted.</p>	<table border="1" data-bbox="1451 272 2024 596"> <tr> <td>Media exposure</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bushboard</td> <td>6.259</td> <td>3.622</td> <td>1.73</td> </tr> <tr> <td>Billboard</td> <td>1.862</td> <td>0.883</td> <td>2.11</td> </tr> <tr> <td>Radio</td> <td>0.063</td> <td>0.424</td> <td>0.15</td> </tr> <tr> <td>Print</td> <td>5.570</td> <td>1.716</td> <td>3.25</td> </tr> <tr> <td>Movie</td> <td>6.301</td> <td>1.748</td> <td>3.60</td> </tr> </table> <p>The estimated advertising effect appeared to be meaningful. Results suggested that on average, controlling for all variables in the model, the hotline received 1.598 (0.034*47months) more calls per ZIP code in Louisiana during December 2008 than it did in February of 2005.</p> <p>Bushboard advertisements are estimated to increase monthly call volumes to the hotlines by a mean of 6.26 calls within each ZIP codes.</p> <p>Billboard advertisements are estimated to increase monthly call volumes to the hotlines by a mean of 1.86 calls within each ZIP codes.</p> <p>Radio advertisements are estimated to increase monthly call volumes to the hotlines by a mean of 0.06 calls within each ZIP codes.</p> <p>Print advertisements are estimated to increase monthly call volumes to the hotlines by a mean of 5.57 calls within each ZIP codes.</p> <p>Movie advertisements are estimated to increase monthly call volumes to the hotlines by a mean of 6.30 calls within each ZIP codes.</p>	Media exposure				Bushboard	6.259	3.622	1.73	Billboard	1.862	0.883	2.11	Radio	0.063	0.424	0.15	Print	5.570	1.716	3.25	Movie	6.301	1.748	3.60
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			<p>Overall combined estimated impact of the media campaign represented appropriately 12% of all Louisiana calls received by the hotline in the 47-months period. (2,836/24,602).</p> <p>Author's conclusion</p> <p>On the whole, the LPYSP media campaign appeared to be fairly successful at raising awareness of lifeline hotline.</p>
<p>Limitations identified by author The experimental and comparison parishes have not been randomly assigned. The study had operationalise calls to the hotline as a measure of awareness when there is some distance between the act of calling and the cognitive state of being made aware as a result of campaign.</p> <p>Limitations identified by review team The number of calls was recorded, but whether the call was related to suicidal individuals was unclear. The estimated effect was for 47 months period, from 2005 to 2008. No direct comparison before and after the media campaign. The length of exposure to different types of media campaign varied from 1 day to 4 months.</p>			

E.1.3 Karras et al 2017

<p>Karras Elizabeth, Lu Naiji, Elder Heather, Tu Xin, Thompson Caitlin, Tenhula Wendy, Batten Sonja V, and Bossarte Robert M (2017) Promoting help seeking to veterans: A comparison of public messaging strategies to enhance the use of the veterans crisis line. Crisis: The Journal of Crisis Intervention and Suicide Prevention 38(1), 53-62</p>							
Study details	Research Parameters	Population / Intervention	Results				
<p>Author/year Karras et al 2017</p> <p>Quality score -</p> <p>Study type RCT</p>	<p>Inclusion criteria Residents in 10 cities</p> <p>Sites were selected based on demographic composition (e.g., estimated veteran population), geographic location, opportunities for promotion (available media outlets), and the capacity for local VA facilities to respond to an increased need that may result from the public messaging.</p>	<p>Participant numbers 10 USA cities</p> <p>Participant characteristics Several messaging strategies were implemented as part of this pilot work (described further in the methods), and participating communities were assigned to one of three exposure groups: (a) a low campaign dose of It's Your Call messages; (b) high doses of It's Your Call advertising; or</p>	<p>Primary outcomes Call volume to the VCL, which is a toll-free confidential service that provides care to veterans and active duty military personnel in crisis and connects their families and friends to resources.</p> <p>Eight-week moving average of calls to the Veterans Crisis Line (VCL) for study exposure groups: US, May 1, 2011, to April 30, 2012</p> <table border="1"> <tr> <td></td> <td>Low campaign dose</td> <td>High campaign dose</td> <td>Mixed messages</td> </tr> </table>		Low campaign dose	High campaign dose	Mixed messages
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<p>Aim of the study</p> <p>The aim of this pilot study is to compare and assess three public messaging strategies (with varying intensity and mix of messages) to enhance the use of the Veterans Crisis Line (VCL) during the 'It's Your Call' Campaign'.</p> <p>Location and setting</p> <p>10 cities in the USA</p> <p>Length of study</p> <p>12 months</p> <p>Source of funding</p> <p>Not reported</p>	<p>Exclusion criteria</p> <p>Not reported</p> <p>Method of analysis</p> <p>De-identified daily VCL call data were obtained from the VA for area codes within the 10 pilot cities for the year surrounding the campaign period (May 1, 2011, to April 30, 2012), and were grouped according to exposure (those assigned to low-dose It's Your Call campaign vs. high-dose vs. mixed-message markets).</p> <p>The average weekly calls to the VCL were calculated and the 8-week moving average was plotted for the study period for each exposure group.</p> <p>The average daily number of VCL calls was tabulated for each exposure group, and grouped into three equal time periods:</p> <p>(a) pre-campaign, 5/1/2011–8/31/2011;</p> <p>(b) during the campaign, 9/1/2011–12/31/2011; and</p> <p>(c) post-campaign, 1/1/2012–4/30/2012.</p>	<p>(c) mixed messages where both high doses of It's Your Call messaging and the VA's Make the Connection public awareness campaign were disseminated.</p> <p>When community demographics were compared across exposure groups, several significant differences were found among residents including</p> <table border="1" data-bbox="819 517 1368 1088"> <thead> <tr> <th></th> <th>Low dose</th> <th>High dose</th> <th>Mixed message</th> </tr> </thead> <tbody> <tr> <td>Veteran status</td> <td>7.97%</td> <td>11.07%</td> <td>5.95%</td> </tr> <tr> <td>Race: White</td> <td>49.45%</td> <td>77.96%</td> <td>67.66%</td> </tr> <tr> <td>Marital status</td> <td>30.22%</td> <td>40.18%</td> <td>32.83%</td> </tr> <tr> <td>Age(65 and older)</td> <td>10.42%</td> <td>10.96%</td> <td>10.76%</td> </tr> <tr> <td>Unemployment</td> <td>9.86%</td> <td>5.02%</td> <td>7.11%</td> </tr> <tr> <td>Internet access for study regions</td> <td>77.16%</td> <td>74.09%</td> <td>78.44%</td> </tr> </tbody> </table> <p>Intervention</p> <p>The It's Your Call Campaign was launched in 2011 with the primary goal of increasing awareness and use of the newly rebranded Veterans Crisis Line (VCL). The VCL is a toll-free confidential service that provides care to veterans and active</p>		Low dose	High dose	Mixed message	Veteran status	7.97%	11.07%	5.95%	Race: White	49.45%	77.96%	67.66%	Marital status	30.22%	40.18%	32.83%	Age(65 and older)	10.42%	10.96%	10.76%	Unemployment	9.86%	5.02%	7.11%	Internet access for study regions	77.16%	74.09%	78.44%	<table border="1" data-bbox="1424 272 2002 1023"> <tbody> <tr> <td>May-11</td> <td>95</td> <td>77</td> <td>83</td> </tr> <tr> <td>Jun-11</td> <td>100</td> <td>80</td> <td>105</td> </tr> <tr> <td>Jul-11</td> <td>95</td> <td>80</td> <td>110</td> </tr> <tr> <td>Aug-11</td> <td>110</td> <td>90</td> <td>125</td> </tr> <tr> <td>Start campaign</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sep-11</td> <td>110</td> <td>102</td> <td>115</td> </tr> <tr> <td>Oct-11</td> <td>105</td> <td>100</td> <td>125</td> </tr> <tr> <td>Nov-11</td> <td>100</td> <td>95</td> <td>143</td> </tr> <tr> <td>Dec-11</td> <td>120</td> <td>100</td> <td>140</td> </tr> <tr> <td>End campaign</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Jan-12</td> <td>113</td> <td>105</td> <td>125</td> </tr> <tr> <td>Feb-12</td> <td>120</td> <td>112</td> <td>125</td> </tr> <tr> <td>Mar-12</td> <td>123</td> <td>110</td> <td>133</td> </tr> <tr> <td>Apr-12</td> <td>126</td> <td>110</td> <td>135</td> </tr> </tbody> </table> <p>Regression analyses for average daily calls and daily call rates to the Veterans Crisis Line (VCL) before, during, and after the It's Your Call campaign for study exposure groups: US, May 1, 2011, to April 30, 2012</p> <table border="1" data-bbox="1424 1145 2018 1319"> <thead> <tr> <th></th> <th>Low campaign dose</th> <th>High campaign dose</th> <th>Mixed messages</th> </tr> </thead> <tbody> <tr> <td>Call post-campaign</td> <td>0.17</td> <td>0.24</td> <td>0.08</td> </tr> </tbody> </table>	May-11	95	77	83	Jun-11	100	80	105	Jul-11	95	80	110	Aug-11	110	90	125	Start campaign				Sep-11	110	102	115	Oct-11	105	100	125	Nov-11	100	95	143	Dec-11	120	100	140	End campaign				Jan-12	113	105	125	Feb-12	120	112	125	Mar-12	123	110	133	Apr-12	126	110	135		Low campaign dose	High campaign dose	Mixed messages	Call post-campaign	0.17	0.24	0.08
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		<p>duty military personnel in crisis and connects their families and friends to resources.</p> <p>The primary goal of this campaign was to promote awareness and use of the VCL to the broad veteran population. Messages displayed images of veterans and their loved ones as well as the campaign slogan, "It's Your Call," and used specific language to target the intended audience ("confidential help for veterans...").</p> <p>Three exposure groups assigned to:</p> <p>(1) a low campaign dose of It's Your Call messages;</p> <p>(2) high doses of It's Your Call advertising; or</p> <p>(3) mixed messages where both high doses of It's Your Call messaging and the VA's Make the Connection public awareness campaign were disseminated.</p> <p>The Make the Connection campaign was also implemented in 2011 by VA to provide veterans and their families with information on mental health issues and treatment as well as to connect them to available resources and support. The campaign introduced individuals to narrative videos of personal stories from real veterans and their families recognizing mental health issues, overcoming challenges, and succeeding with treatment and recovery.</p> <p>The public messages utilized in the current study featured quotes by veterans that encouraged others to seek help ("I'm a veteran, I know what it's like... There's a whole community of veterans out there who just want to help") and promoted the website by providing the link.</p>	<table border="1"> <tr> <td></td> <td>(SE 0.03)</td> <td>(SE 0.04)</td> <td>(SE 0.03)</td> </tr> <tr> <td>Time</td> <td>0.0003 (SE 0.001)</td> <td>0.003 (SE 0.001)</td> <td>0.0002 (SE 0.001)</td> </tr> <tr> <td>Time * post-campaign</td> <td>0.0003 (SE 0.001)</td> <td>0.002 (0.001)</td> <td>-0.002 (0.001)</td> </tr> </table> <p>Author's conclusions</p> <p>Findings are encouraging as messaging was associated with help seeking, and they provide insights into strategies that may rapidly promote crisis line use.</p>				(SE 0.03)	(SE 0.04)	(SE 0.03)	Time	0.0003 (SE 0.001)	0.003 (SE 0.001)	0.0002 (SE 0.001)	Time * post-campaign	0.0003 (SE 0.001)	0.002 (0.001)	-0.002 (0.001)
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<p>Limitations identified by author</p> <p>This was an observational study where direct measures of campaign exposure and crisis line use were not collected. As such, the identification of causal relationships between variables was not permitted.</p> <p>Changes in VCL call volume may be ascribed to community differences or other unobserved factors such as exposure to unrelated local or regional efforts to promote help seeking or crisis line use, particularly surrounding September (suicide prevention month). Yet, it is unlikely that promotional activities were disseminated consistently across cities over the study period.</p> <p>A number of baseline differences were also identified between exposure groups that were not accounted for in our models, and may have attributed to observed changes in VCL use.</p> <p>Data on motives for calling were also unavailable and not included in analyses.</p>																	

Analyses were focused on select pilot communities that are not necessarily representative of veterans living in the US, and the placement of advertisements (e.g., mass transit) may have restricted exposure to select subpopulations

Limitations identified by review team

No further limitation identified

E.1.4 Klimes-Dougan et al 2016 and 2010

Klimes-Dougan Bonnie, Wright Nathan, and Klingbeil David A (2016) Suicide Prevention Public Service Announcements Impact Help Seeking Attitudes: The Message Makes a Difference. *Frontiers in Psychiatry* 7 (study 1)

Klimes-Dougan Bonnie, Lee Chih-Yuan, and Steven (2010) Suicide prevention public service announcements: Perceptions of young adults. *Crisis: The Journal of Crisis Intervention and Suicide Prevention* 31(5), 247-254 (study2)

Study details	Research Parameters	Population / Intervention	Results
<p>Author/year</p> <p>Study 1</p> <p>Klimes-Dougan Bonnie, et al (2016)</p> <p>Study 2</p> <p>Klimes-Dougan Bonnie, et al (2010)</p> <p>Quality score</p> <p>+</p> <p>Study type</p> <p>RCT</p> <p>Aim of the study</p> <p>To examine individual differences in help-seeking</p>	<p>Number of participants</p> <p>Study 1</p> <p>785</p> <p>Study 2</p> <p>279</p> <p>Characteristics of participants</p> <p>Study 1</p> <p>A total of 785 part- or full-time university students between the ages of 18 and 34 years old (M = 21.9; SD = 2.8) served as participants for this study. The sample consisted of primarily upper level undergraduate students (81.6%). The majority of participants were females (79.2%). The majority of participants primarily identified as Caucasian (65.2%), followed by Latin American (21.9%), Native American (6.3%), Asian American (4.5%), and African American (1.4%). Nearly 89% of participants were born in the United States.</p>	<p>Intervention / Comparison</p> <p>Intervention:</p> <p>A public service announcement (PSA) is a non-commercial advertisement, that typically broadcasts on radio or television intended to publicise an issue of relevance or interest to the public.</p> <p>Ideally PSAs modify public attitudes and behaviour by raising awareness about specific issues and communicating key information.</p> <p>All types of messaging tested here were developed by Suicide Awareness Voices of Education (SAVE), a Minneapolis-based non-profit suicide prevention agency, as part of a state-wide public service campaign.</p>	<p>Primary outcomes</p> <p>A questionnaire was adapted to evaluate participants' perceptions of utility of PSAs; knowledge of depressive symptoms; normative belief (estimates of suicide risk; and coping attitudes</p> <p>Study 1</p> <p>Help-seeking attitudes</p> <p>For the PSA groups, average help-seeking attitudes were 2.64 (SD = 0.64) for the original billboard group, 2.81 (SD = 0.59) for the alternative billboard group, and 2.83 (SD = 0.68) for the video group. To examine the effect of PSA group, we fit a linear regression model that controlled for participants' sex, age, race, and broad risk status. The overall model was statistically significant, $F(6, 776) = 9.237, p < 0.001$. The covariates accounted for approximately 6% of the variance in participants' help-seeking attitudes. Sex and race were the significant predictors of average help-seeking scores. The effect of age or depression/suicide risk was not significant after controlling for the effect of the other covariates in the model. After controlling for the covariates, there were</p>

<p>attitudes, knowledge of maladaptive coping behaviours, and reported concerns about PSA exposure among young adults in response to two different simulated billboard messages and a simulated TV ad.</p> <p>Location and setting</p> <p>Minnesota, USA</p> <p>Length of study</p> <p>Study 1</p> <p>Participants recruited between 2006 and 2011, and the study was published in 2016</p> <p>Study 2</p> <p>Participants recruited between 2006 and 2007, and the study was published in 2010.</p> <p>Source of funding</p> <p>Not reported</p>	<table border="1"> <thead> <tr> <th></th> <th>Original billboard</th> <th>Alternative billboard</th> <th>TV ad</th> </tr> </thead> <tbody> <tr> <td>Number</td> <td>406</td> <td>279</td> <td>100</td> </tr> <tr> <td>% of female</td> <td>77.8%</td> <td>79.2%</td> <td>85.0%</td> </tr> <tr> <td>Mean age (SD)</td> <td>21.8 (2.7)</td> <td>21.7 (2.7)</td> <td>22.6 (3.3)</td> </tr> <tr> <td>Depression/suicide risk</td> <td>36.2%</td> <td>27.2%</td> <td>31.0%</td> </tr> <tr> <td>Previous suicide attempt</td> <td>7.4%</td> <td>6.8%</td> <td>7.0%</td> </tr> </tbody> </table>		Original billboard	Alternative billboard	TV ad	Number	406	279	100	% of female	77.8%	79.2%	85.0%	Mean age (SD)	21.8 (2.7)	21.7 (2.7)	22.6 (3.3)	Depression/suicide risk	36.2%	27.2%	31.0%	Previous suicide attempt	7.4%	6.8%	7.0%	<p>In both billboard conditions, participants were asked to imagine they viewed it while driving in a vehicle. They were then shown a large PowerPoint projection (approximately 3 × 5 ft) of the billboard for 5 s. The original billboard read “<i>Prevent suicide. Treat depression.</i>” The alternative billboard read “<i>Stop depression from taking another life.</i>” Both billboards provided the directive, “<i>See your doctor</i>” and had the SAVE website listed. They also had both, the same depiction of a middle-aged, white male on the right of the billboard and a cardiac rhythm depicted along the bottom border.</p> <p>Similarly, in the TV ad condition, participants were asked to imagine they saw the PSA while watching television. They were then presented with a 30-s video that featured several adults of different sexes and races. The video described depression as “<i>a brain illness</i>,” and noted salient symptoms of depression. The message went on to have components of both billboards (“<i>If you see the symptoms of depression, get that person to a doctor. With medical help, depression can be treated, suicide can be prevented. Learn how to stop depression from taking another life.</i>”). The video ended with the printed message “<i>Prevent</i></p>	<p>significant differences between the PSA groups. Participants in the alternative billboard group and the TV condition endorsed significantly higher help-seeking attitudes than participants in the original billboard group.</p> <table border="1"> <thead> <tr> <th></th> <th>B (SE)</th> <th>95%CI</th> <th>T</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Constant</td> <td>2645 (0.197)</td> <td>2.258, 3.033</td> <td>13.408</td> <td><0.001</td> </tr> <tr> <td>Group</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Video vs original billboard</td> <td>0.167 (0.069)</td> <td>0.030, 0.0303</td> <td>2.401</td> <td>0.017</td> </tr> <tr> <td>Alternative billboard vs original billboard</td> <td>0.152 (0.048)</td> <td>0.057, 0.247</td> <td>3.154</td> <td>0.002</td> </tr> <tr> <td>Female vs male</td> <td>0.283 (0.055)</td> <td>0.175, 0.391</td> <td>5.149</td> <td><0.001</td> </tr> <tr> <td>Age</td> <td>-0.014 (0.008)</td> <td>-0.030, 0.002</td> <td>-1.712</td> <td>0.087</td> </tr> <tr> <td>Caucasian</td> <td>0.144 (0.052)</td> <td>0.042, 0.247</td> <td>2.760</td> <td>0.006</td> </tr> <tr> <td>High-risk depression suicide</td> <td>-0.078 (0.048)</td> <td>-0.170, 0.170</td> <td>-</td> <td>0.109</td> </tr> </tbody> </table> <p>Maladaptive coping strategies</p> <p>Among the PSA groups, approximately 54% of participants in the original billboard group, 53% in the alternative billboard condition, and 42% in the TV ad condition endorsed one or more maladaptive coping strategies.</p>		B (SE)	95%CI	T	p	Constant	2645 (0.197)	2.258, 3.033	13.408	<0.001	Group					Video vs original billboard	0.167 (0.069)	0.030, 0.0303	2.401	0.017	Alternative billboard vs original billboard	0.152 (0.048)	0.057, 0.247	3.154	0.002	Female vs male	0.283 (0.055)	0.175, 0.391	5.149	<0.001	Age	-0.014 (0.008)	-0.030, 0.002	-1.712	0.087	Caucasian	0.144 (0.052)	0.042, 0.247	2.760	0.006	High-risk depression suicide	-0.078 (0.048)	-0.170, 0.170	-	0.109
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	<p>and behaviours. The experiment was carried out during or after class.</p> <p>Exclusion criteria</p> <p>Students aged over 36 years.</p>	<p><i>suicide. Treat depression.</i>" with the phone number of SAVE.</p> <p>Comparison:</p> <p>All participants completed a brief demographic questionnaire that also screened for experience with depression and suicide.</p> <p>Study 1</p> <p>Students were either randomly assigned to one of the two billboard conditions or one of the three conditions (original billboard, alternative billboard, and TV ad). Participants were generally asked to wait outside the classroom when their condition was not being shown.</p> <p>Study 2</p> <p>Within each course, participants were randomly assigned to one of the 3 groups, including billboard, TV and no information.</p>	<p>After controlling for covariates (age, gender, ethnicity, depression/suicide risk) in the model, there was no significant difference in the odds of endorsing one or more maladaptive strategies when comparing the original billboard to the TV ad condition (OR = 0.67, $p = 0.08$) or the original billboard to the alternative billboard (OR = 1.00, $p = 0.98$) condition.</p> <p>Concern/distress</p> <p>Thirty-one percent of the participants in the original billboard group, 33% in the alternative billboard group, and 29% in the TV ad group reported some concern/distress after viewing the PSAs. After controlling for the covariates, viewing the TV ad condition compared to the original billboard (OR = 0.92, $p = 0.75$) or the alternative billboard compared to the original billboard (OR = 1.08, $p = 0.66$) did not have a significant effect on the odds of reporting concern/distress.</p> <p>Study 2</p> <p>Utility of PSA (usefulness)</p> <table border="1" data-bbox="1464 810 2018 986"> <thead> <tr> <th></th> <th>Billboard (n=97)</th> <th>TV ad (n=100)</th> <th>No info (n=82)</th> </tr> </thead> <tbody> <tr> <td>Overall "usefulness"</td> <td>2.51 (0.87)</td> <td>2.80 (0.95)</td> <td>2.59 (0.87)</td> </tr> </tbody> </table> <p>Depression knowledge</p> <table border="1" data-bbox="1464 1034 2040 1134"> <thead> <tr> <th></th> <th>Billboard</th> <th>TV ad</th> <th>No info</th> </tr> </thead> <tbody> <tr> <td>Symptoms</td> <td>0.85 (0.11)</td> <td>0.88 (0.10)</td> <td>0.84 (0.11)</td> </tr> </tbody> </table> <p>Normative beliefs</p> <table border="1" data-bbox="1464 1182 2040 1305"> <thead> <tr> <th></th> <th>Billboard</th> <th>TV ad</th> <th>No info</th> </tr> </thead> <tbody> <tr> <td>Suicide ideation</td> <td>3.68 (1.28)</td> <td>3.40 (1.25)</td> <td>3.79 (1.31)</td> </tr> </tbody> </table>		Billboard (n=97)	TV ad (n=100)	No info (n=82)	Overall "usefulness"	2.51 (0.87)	2.80 (0.95)	2.59 (0.87)		Billboard	TV ad	No info	Symptoms	0.85 (0.11)	0.88 (0.10)	0.84 (0.11)		Billboard	TV ad	No info	Suicide ideation	3.68 (1.28)	3.40 (1.25)	3.79 (1.31)
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<p>Limitations identified by author There are measurement issues that need to be addressed in future research, given the moderate internal consistency of the scales (e.g., maladaptive coping), the distribution of responses, and the inconsistent findings across scales (despite the fact that the maladaptive coping scale is related to the help-seeking scale, $r = -0.23$). This study examined endorsed attitudes after viewing a PSA, and not the actual behaviours. It would have been ideal to also know if young adults who viewed PSAs were more likely to reach out to family members, friends, or professionals to get help for themselves or others who are struggling with suicidal thoughts. There are limitations regarding generalizability of the results given that the majority of the participants were white, female college students selected from behavioural science courses. In some respects, the characteristics of these participants may have been ideal.</p> <p>Limitations identified by review team Selection bias: participation was voluntary, and all students were from one university. Outcomes were measured using self-reported data.</p>																			

E.1.5 Oliver et al 2008

Oliver R J, Spilsbury J C, Osiecki S S, Denihan W M, Zureick J L, and Friedman S (2008) Brief report: Preliminary results of a suicide awareness mass media campaign in Cuyahoga County, Ohio. <i>Suicide and Life-Threatening Behavior</i> 38(2), 245-249																																			
Study details	Research Parameters	Population / Intervention	Results																																
<p>Author/year Oliver R J, et al (2008)</p> <p>Quality score -</p> <p>Study type Experimental</p> <p>Aim of the study To evaluate the effect of an awareness/prevention campaign in Cleveland and surrounding Cuyahoga County</p> <p>Location and setting Cleveland and surrounding Cuyahoga County, USA</p> <p>Length of study Phase1, mid-Feb 2005 to June 2005 Phase 2, November 2005 to March 2006</p> <p>Source of funding Not reported</p>	<p>Number of participants The county's estimated 2006 population was 1.3 million.</p> <p>Characteristics of participants The suicide rate for the City of Cleveland, the county seat, has average 23% higher than the rate for the state of Ohio.</p> <p>Inclusion criteria Not reported</p> <p>Exclusion criteria Not reported</p>	<p>Intervention / Comparison</p> <p>Intervention: The campaign message and accompanying artwork were developed by a gender-balanced, ethnically diverse group that included both suicide survivors and family member of individuals who died by suicide. The campaign message was "Suicide Is Preventable. Its Cause Are Treatable. For immediate help call (emergency number)" Accompanying artwork featured a partial human visage designed to be of indeterminate age, ethnicity and gender, thereby potentially enabling any individual to see himself or herself in the campaign material.</p> <p>The initial media campaign consisted of: (1) Placards that were placed on the exterior of 60 Regional Transit Authority public transportation buses (2) Posters placed in the interior of 350 RTA buses (3) 33 billboards placed at strategic locations throughout the county with the locations changed every 30 days for maximum overall exposure</p>	<p>Primary outcomes</p> <p>Average calls per month (per 100,000)</p> <table border="1"> <thead> <tr> <th>Baseline (Dec2003 to Feb 2005)</th> <th>Phase 1 (Mar 2005 Jun 2005)</th> <th>Between phases (July 2005 to Oct 2005)</th> <th>Phase 2 (Nov 2005 to Mar 2006)</th> </tr> </thead> <tbody> <tr> <td>23.1 (SD 3.1)</td> <td>29.9 (SD 1.4)</td> <td>26.8 (SD 2.0)</td> <td>30.8 (SD 3.4)</td> </tr> </tbody> </table> <p>Average monthly suicide calls during campaign vs same month previous year</p> <table border="1"> <thead> <tr> <th></th> <th>2004 Pre-campaign</th> <th>2005 Campaign</th> <th>Effect (mean difference)</th> </tr> </thead> <tbody> <tr> <td>Phase 1</td> <td></td> <td></td> <td>3.7 (1.5-6.0)</td> </tr> <tr> <td>March</td> <td>29.1</td> <td>32.0</td> <td></td> </tr> <tr> <td>April</td> <td>27.1</td> <td>29.4</td> <td></td> </tr> <tr> <td>May</td> <td>25.0</td> <td>29.1</td> <td></td> </tr> <tr> <td>June</td> <td>23.7</td> <td>29.2</td> <td></td> </tr> </tbody> </table>	Baseline (Dec2003 to Feb 2005)	Phase 1 (Mar 2005 Jun 2005)	Between phases (July 2005 to Oct 2005)	Phase 2 (Nov 2005 to Mar 2006)	23.1 (SD 3.1)	29.9 (SD 1.4)	26.8 (SD 2.0)	30.8 (SD 3.4)		2004 Pre-campaign	2005 Campaign	Effect (mean difference)	Phase 1			3.7 (1.5-6.0)	March	29.1	32.0		April	27.1	29.4		May	25.0	29.1		June	23.7	29.2	
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<p>Limitations identified by author No control group for comparison; A lack of information pertaining to whether individual callers were actually exposed to the prevention campaign.</p> <p>Limitations identified by review team Short follow-up time Whether there was other events in the areas, and this could affect true effect of the campaign.</p>																							

E.1.6 Ono et al 2013

<p>Ono Y utaka, Sakai Akio, Otsuka Kotaro, Uda Hidenori, Oyama Hirofumi, Ishizuka Naoki, Awata Shuichi, Ishida Yasushi, Iwasa Hiroto, Kamei Yuichi, Motohashi Yutaka, Nakamura Jun, Nishi Nobuyuki, Watanabe Naoki, Yotsumoto Toshihiko, and Nakagawa A. 2013. "Effectiveness of a multimodal community intervention program to prevent suicide and suicide attempts: A quasi-experimental study". <i>PLoS one</i> 8:e74902.</p>					
Study details	Research Parameters	Population / Intervention			Results
Author/year Ono et al, 2013	Inclusion criteria We set two areas, rural areas and highly populated areas, as the study targets.	Participant numbers			Primary outcomes Incidence rate of combined suicide including completed suicide and suicide attempts
Quality score	The participants in the rural areas were the inhabitants		Rural areas		
			Highly populated areas		
		Int	Control	Int	control

<p>+</p> <p>Study type Quasi-experimental</p> <p>Aim of the study To examine the effectiveness of a community-based multimodal intervention for suicide prevention in rural areas where the suicide rate was high, with a non-randomised comparative intervention trial using parallel prevention-as-usual control</p> <p>Location and setting Japan</p> <p>Length of study 3.5 years</p> <p>Source of funding This work is supported by Ministry of Health, Labour, and Welfare of Japan.</p>	<p>living in four matched pairs of intervention groups and control groups (consisting of 17 communities);</p> <p>In highly populated areas, two neighbouring communities were designated as the intervention and control groups, respectively. The participants in the highly populated areas were the inhabitants living in three matched pairs of intervention group and control group (consisting of six communities)</p> <p>Exclusion criteria Not reported</p> <p>Method of analysis In the primary analysis, we compared the rate ratios (RRs) of incidence of the composite outcome as adjusted by covariates for the effect of the intervention.</p>	<table border="1"> <tr> <td>no. areas</td> <td>7</td> <td>10</td> <td>3</td> <td>3</td> </tr> <tr> <td>No. people</td> <td>291,459</td> <td>339,674</td> <td>615,586</td> <td>704,341</td> </tr> </table>	no. areas	7	10	3	3	No. people	291,459	339,674	615,586	704,341	<p>Participant characteristics</p> <table border="1"> <tr> <td></td> <td>Rural areas</td> <td></td> <td>Highly populated areas</td> <td></td> </tr> <tr> <td></td> <td>Int</td> <td>Control</td> <td>Int</td> <td>control</td> </tr> <tr> <td>% of male</td> <td>47</td> <td>47</td> <td>50</td> <td>49</td> </tr> <tr> <td>% under 25</td> <td>16</td> <td>16</td> <td>17</td> <td>17</td> </tr> <tr> <td>% aged 25-64</td> <td>55</td> <td>53</td> <td>66</td> <td>64</td> </tr> </table>		Rural areas		Highly populated areas			Int	Control	Int	control	% of male	47	47	50	49	% under 25	16	16	17	17	% aged 25-64	55	53	66	64	<table border="1"> <tr> <td></td> <td>Rural areas</td> <td></td> <td>Highly populated areas</td> <td></td> </tr> <tr> <td></td> <td>Int</td> <td>Control</td> <td>Int</td> <td>control</td> </tr> <tr> <td>2006 (1-6m) (no.)</td> <td>62.4 (n=91)</td> <td>81.8 (n=139)</td> <td>53.9 (n=166)</td> <td>55.9 (n=197)</td> </tr> <tr> <td>2006 (7-12)</td> <td>67.6 (n=98)</td> <td>52.7 (=89)</td> <td>65.5 (n=202)</td> <td>59.0 (n=208)</td> </tr> <tr> <td>2007 (1-6)</td> <td>61.6 (89)</td> <td>61.3 (n=103)</td> <td>53.0 (n=164)</td> <td>58.9 (n=208)</td> </tr> <tr> <td>2007 (7-12)</td> <td>45.9 (n=66)</td> <td>61.8 (n=103)</td> <td>49.6 (n=154)</td> <td>53.7 (n=190)</td> </tr> </table>		Rural areas		Highly populated areas			Int	Control	Int	control	2006 (1-6m) (no.)	62.4 (n=91)	81.8 (n=139)	53.9 (n=166)	55.9 (n=197)	2006 (7-12)	67.6 (n=98)	52.7 (=89)	65.5 (n=202)	59.0 (n=208)	2007 (1-6)	61.6 (89)	61.3 (n=103)	53.0 (n=164)	58.9 (n=208)	2007 (7-12)	45.9 (n=66)	61.8 (n=103)	49.6 (n=154)	53.7 (n=190)	<p>In the rural areas, the overall median adherence of the intervention was significantly higher. The RR of the composite outcome in the intervention group decreased 7% compared with that of the control group. Subgroup analyses demonstrated heterogeneous effects among subpopulations: the RR of the composite outcome in the intervention group was significantly lower in males (RR = 0.77, 95% CI 0.59–0.998, p = 0.0485) and the RR of suicide attempts was significantly lower in males (RR = 0.39, 95% CI 0.22–0.68, p = 0.001) and the elderly (RR = 0.35, 95% CI 0.17–0.71, p = 0.004). The intervention had no effect on the RR of the composite outcome in the highly populated areas</p> <p>Completed suicide</p> <table border="1"> <tr> <td></td> <td>Number</td> <td>Population</td> </tr> <tr> <td>Before</td> <td></td> <td></td> </tr> <tr> <td>2003</td> <td>136</td> <td>593844</td> </tr> <tr> <td>2004</td> <td>154</td> <td>590320</td> </tr> </table>		Number	Population	Before			2003	136	593844	2004	154	590320
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			Our findings suggest that this community-based multimodal intervention for suicide prevention could be implemented in rural areas, but not in highly populated areas.
<p>Limitations identified by author There are several limitations of the present study. 1) The study was not a randomised trial. Therefore, we used a matched pair design and a model adjusted for possible confounding factors in the analysis. However, some unmeasured and residual confounders may still persist. We need to perform randomised trials confirming our insights. 2) The study participants, investigators and the reporters of events were not blind to the intervention. Although the outcomes were systematically collected from official records, the study might have some misclassification bias. 3) Adherence to the intervention was limited. The adherence would be improved by investing sufficient budgets and resources.</p> <p>Limitations identified by review team Non-randomised trial study design. Health related profiles of population in target areas were unclear, potential factors associated with suicide were not clear.</p>			

E.1.7 Silk et al 2017

Silk Kami J, Perrault Evan K, Nazione Samantha A, Pace Kristin, and Collins-Eaglin Jan (2017) Evaluation of a Social Norms Approach to a Suicide Prevention Campaign. <i>Journal of health communication</i> 22(2), 135-142			
Study details	Research Parameters	Population / Intervention	Results
<p>Author/year Silk et al 2017</p> <p>Quality score</p> <p>Study type Quasi-experimental</p> <p>Aim of the study</p>	<p>Inclusion criteria University neighbourhoods are geographically distinct sections of the campus consisting of residence hall clusters.</p> <p>Exclusion criteria Not reported</p>	<p>Participant numbers University students</p> <p>Participant characteristics Students in the two campaign neighbourhoods and the control neighbourhood (n = 391). Approximately 35% of these participants (n = 137) lived in the peer source neighbourhood, 45.8% lived in a celebrity source neighbourhood (n = 179), and 19.2% lived in another campus neighbourhood (receiving no campaign materials) (n = 75). Most participants were underclassman (62.4% freshmen, 28.6% sophomores), with fewer being upper class-man (5.4% juniors and 3.6% seniors). These students' ages ranged from</p>	<p>Primary outcomes For all participants, students completed scales to assess their intentions to communicate with others about the UCC, intentions to seek mental health services, attitudes toward the UCC, and perceptions of stigma of mental health. All scales were measured on seven-point Likert scales (1 = strongly disagree, 7 = strongly agree). Three items measured students' intentions to communicate with others about the UCC. 4 items measured help-seeking intentions. 4 items measured attitudes toward the on-campus UCC. 5 items measured stigma. To measure utilization of the UCC, the research team partnered with the UCC to revise UCC intake forms so that students would report in which residence hall they lived.</p>

<p>To evaluate the effectiveness of a quasi-experimental social norms campaign with peer and celebrity message sources to encourage mental health help seeking among students..</p> <p>Location and setting</p> <p>University campus neighbourhoods, USA</p> <p>Length of study</p> <p>The campaign was implemented from February to April 2012.</p> <p>Source of funding</p> <p>Not reported</p>	<p>Method of analysis</p> <p>One neighbourhood served as a peer social norm condition with only posters with peer images, and a second neighbourhood served as the celebrity social norm condition with only basketball athletic team images. The remaining neighbourhoods served as the control group with no campaign materials.</p>	<p>18 to 28 years with a mean age of 19.01 (SD = 1.07). The majority of the students were female (60.6%) and Caucasian (64.9%). An additional 16.2% were African American, 11.0% were Asian, 3.6% were Hispanic, 2.8% were multiracial, and 1.5% listed another ethnicity.</p> <p>Intervention</p> <p>The campaign was implemented from February to April 2012, and messages were disseminated through four channels: posters, table toppers, digital signs, and e-mails.</p> <p>In February, table toppers, posters, e-mails, and a digital sign were dispersed in both of the campaign neighbourhoods with the message, "72% of [university] students would seek help if they felt overwhelmed by stress or depression."</p> <p>In mid-March, the materials were slightly altered (and then redistributed) by replacing the first social norms message with the second message, "2/3 of [university] students would tell a friend to go to the University counselling centre (UCC) if they thought the friend needed help."</p> <p>Posters</p> <p>The peer condition poster featured the descriptive norm data noted previously as well as a male and female student talking while walking on the university's campus. Underneath the students was the tagline, "Come talk to us." The celebrity condition poster featured the same descriptive norm data and included a picture of the school's highly successful basketball team and basketball coach in a huddle on the university's basketball court. The tagline for this message read, "It takes teamwork to tackle a challenge." These pictures and taglines were the only difference between conditions. Posters were placed on the bulletin boards throughout intervention residence halls.</p>	<p>Percentage of students reporting to have seen a source on a poster and differences in reported sources seen by condition.</p> <table border="1" data-bbox="1406 343 2002 791"> <thead> <tr> <th></th> <th>Peer condition</th> <th>Celebrity condition</th> <th>Control condition</th> <th>Overall</th> </tr> </thead> <tbody> <tr> <td>University basketball coach</td> <td>0.9</td> <td>7.1</td> <td>2.3</td> <td>3.8</td> </tr> <tr> <td>University basketball players</td> <td>2.6</td> <td>21.3</td> <td>6.8</td> <td>11.5</td> </tr> <tr> <td>University students</td> <td>64.7</td> <td>51.2</td> <td>43.2</td> <td>55.4</td> </tr> <tr> <td>University mascot</td> <td>43.1</td> <td>48.8</td> <td>45.5</td> <td>46.0</td> </tr> </tbody> </table> <p>An independent samples t-test demonstrated data to be consistent with hypothesis one, $t(388) = 3.18, p < .05$. Students living in an intervention condition ($M = 44.50, SD = 27.41$) reported perceiving a significantly greater number of students would tell a friend about the UCC services as compared to students living in a non-intervention neighbourhood ($M = 33.37, SD = 26.51$).</p> <p>No difference in intentions to communicate with others about the UCC, intentions to seek help, favourable attitudes toward the counselling centre, and reduced stigma reported by students in an intervention and control groups.</p> <p>During the semester of the campaign, 3.2% of the peer condition neighbourhood students visited the UCC (56 out of 1,743 residents), 3.1% of the celebrity condition neighbourhood students visited the UCC (111 out of 3,569 residents), and 2.3% of the control condition neighbourhood students visited the UCC (90 out of 3,993 residents).</p>		Peer condition	Celebrity condition	Control condition	Overall	University basketball coach	0.9	7.1	2.3	3.8	University basketball players	2.6	21.3	6.8	11.5	University students	64.7	51.2	43.2	55.4	University mascot	43.1	48.8	45.5	46.0
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		<p>Table Toppers</p> <p>The table toppers consisted of smaller versions of the posters in a tent-like form, so they could sit upright for easy readability. Table toppers were framed with each respective neighbourhood's local engagement centre border and were placed on the tables of each neighbourhood's engagement centre (a common gathering area for activities).</p> <p>Digital Signs and E-mails</p> <p>Digital signs and e-mails were text only and included the current campaign message for the month, which was constant across the two intervention conditions. Digital signs were located on one wall of each neighbourhood engagement centre.</p> <p>Student e-mail addresses were accessed through a listserv comprised of students living in the intervention neighbourhoods.</p> <p>Comparison</p> <p>Intervention vs control groups</p>	<p>Outcomes comparing students observing UCC materials to those who did not observe any materials.</p> <table border="1" data-bbox="1406 344 2002 1161"> <thead> <tr> <th></th> <th>Observed UCC material (n=289)</th> <th>Did not observe UCC materials (n=102)</th> <th>Estimated effect</th> </tr> </thead> <tbody> <tr> <td>Perceived % of university students that would tell a friend about the UCC</td> <td>44.85 (SD=27.81)</td> <td>35.33 (SD 25.69)</td> <td></td> </tr> <tr> <td>Intentions to communicate with others about the UCC</td> <td>5.84 (SD 1.25)</td> <td>5.44 (SD=1.37)</td> <td></td> </tr> <tr> <td>Help-seeking intentions</td> <td>5.02 (SD 1.41)</td> <td>4.52 (SD 1.49)</td> <td></td> </tr> <tr> <td>Stigma</td> <td>3.02 (SD 1.14)</td> <td>3.21 (SD 1.10)</td> <td></td> </tr> <tr> <td>UCC attitudes</td> <td>5.53 (SD 1.14)</td> <td>5.17 (SD 1.29)</td> <td></td> </tr> </tbody> </table> <p>Author's conclusions</p>		Observed UCC material (n=289)	Did not observe UCC materials (n=102)	Estimated effect	Perceived % of university students that would tell a friend about the UCC	44.85 (SD=27.81)	35.33 (SD 25.69)		Intentions to communicate with others about the UCC	5.84 (SD 1.25)	5.44 (SD=1.37)		Help-seeking intentions	5.02 (SD 1.41)	4.52 (SD 1.49)		Stigma	3.02 (SD 1.14)	3.21 (SD 1.10)		UCC attitudes	5.53 (SD 1.14)	5.17 (SD 1.29)	
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			<p>Findings from this campaign may be helpful to practitioners and researchers planning future mental health and social norms campaigns. Nearly three-fourths of students reported observing UCC materials, demonstrating strong exposure to the campaign materials.</p> <p>Posters, table toppers, and e-mails were remembered most frequently. Printed posters for every event and cause on a college campus can sometimes seem like ubiquitous decorations taking up every inch of available wall space.</p>
<p>Limitations identified by author Students were not randomly assigned to live in neighbourhoods, and exposure to campaign materials by students not living in the intervention neighbourhoods was possible as non-intervention students could visit these neighbourhoods for social or academic reasons</p> <p>Limitations identified by review team Short study follow-up (3 months); generalisability to other population groups;</p>			

E.1.8 Taylor et al 2016

Taylor Anna K, Knipe Duleeka W, and Thomas Kyla H (2016) Railway suicide in England and Wales 2000-2013: a time-trends analysis. BMC public health 16, 270																																						
Study details	Research Parameters	Population / Intervention	Results																																			
<p>Author/year Taylor et al 2017</p> <p>Quality score</p> <p>Study type Observational</p>	<p>Inclusion criteria Confirmed suicides</p> <p>The Rail safety and Standard Boards (RSSB) determined that a death was a suicide instead of an accidental fatality if the death was assessed as intentional based on the presence of one of the following criteria: (i) the presence of a suicide</p>	<p>Participant numbers Not reported</p> <p>Participant characteristics Not reported</p> <p>Intervention In 2010, the programme was launched as a joint initiative among Network Rail (the organisation responsible for rail infrastructure in Britain, the UK charity Samaritans (which provides emotional support to people who are emotionally</p>	<p>Primary outcomes Numbers of suicide in England and Wales from 2000 to 2014 from the Office for National Statistics and the Rail Safety and Standard Board</p> <table border="1"> <thead> <tr> <th></th> <th>Male RSSB</th> <th>Female RSSB</th> <th>All RSSB</th> <th>Male ONS</th> <th>Female ONS</th> <th>All ONS</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>118</td> <td>39</td> <td>157</td> <td>129</td> <td>37</td> <td>166</td> </tr> <tr> <td>2001</td> <td>118</td> <td>37</td> <td>155</td> <td>117</td> <td>34</td> <td>151</td> </tr> <tr> <td>2002</td> <td>134</td> <td>34</td> <td>168</td> <td>139</td> <td>35</td> <td>174</td> </tr> <tr> <td>2003</td> <td>131</td> <td>29</td> <td>160</td> <td>120</td> <td>31</td> <td>151</td> </tr> </tbody> </table>		Male RSSB	Female RSSB	All RSSB	Male ONS	Female ONS	All ONS	2000	118	39	157	129	37	166	2001	118	37	155	117	34	151	2002	134	34	168	139	35	174	2003	131	29	160	120	31	151
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<p>Aim of the study</p> <p>To report the most recent age and sex-specific trends in suicide in England and Wales from 2000 to 2013 and to determine whether the programme is likely to achieve its proposed target of a 20 % reduction in suicides.</p> <p>Location and setting</p> <p>UK</p> <p>Length of study</p> <p>Study period 2000-2013</p> <p>Source of funding</p> <p>One author was funded by a Clinical Lectureship award from the National Institute for Health Research (NIHR) during the time this work was produced. DWK is currently a Wellcome trust PhD student (WT099874MA)</p>	<p>note,</p> <p>(ii) a clear statement of suicidal intent to an informant,</p> <p>(iii) behaviour which demonstrates suicidal intent,</p> <p>(iv) previous suicide attempts,</p> <p>(v) prolonged depression</p> <p>and</p> <p>(vi) the presence of emotional instability due to recent stress or evidence of failure to cope such as a breakdown</p> <p>Exclusion criteria</p> <p>Not reported</p> <p>Method of analysis</p> <p>The study used join-point regression to identify changes in the trends of yearly age standardised suicide rates for those aged 15 years and over across the study period (2000–2013 for ONS data, 2000–2014 for RSSB data)</p>	<p>distressed or experiencing suicidal thoughts and other organisations such as the British Transport Police and train operators.</p> <p>The aim of the programme was to improve the industry's knowledge of suicide and to reduce the number of industry-specific suicides in Great Britain by 20 % from 2010 to 2015. A £5 million investment was made.</p> <p>Several activities were implemented as part of the programme, including the use of posters to increase public awareness of the Samaritans, training for rail staff in how to manage suicidal contacts, trauma support training for staff affected by suicide and physical alterations such as mid platform fencing at stations</p> <p>Comparison</p> <p>Time trend from 2000 to 2013; before and after the campaign (2010)</p>	<table border="1" data-bbox="1397 272 1989 823"> <tr><td>2004</td><td>137</td><td>41</td><td>178</td><td>127</td><td>43</td><td>170</td></tr> <tr><td>2005</td><td>155</td><td>28</td><td>183</td><td>132</td><td>30</td><td>162</td></tr> <tr><td>2006</td><td>165</td><td>57</td><td>222</td><td>152</td><td>36</td><td>188</td></tr> <tr><td>2007</td><td>154</td><td>33</td><td>187</td><td>135</td><td>45</td><td>180</td></tr> <tr><td>2008</td><td>153</td><td>39</td><td>192</td><td>163</td><td>36</td><td>199</td></tr> <tr><td>2009</td><td>151</td><td>47</td><td>198</td><td>134</td><td>43</td><td>177</td></tr> <tr><td>2010</td><td>163</td><td>46</td><td>209</td><td>146</td><td>61</td><td>207</td></tr> <tr><td>2011</td><td>163</td><td>34</td><td>197</td><td>155</td><td>34</td><td>189</td></tr> <tr><td>2012</td><td>183</td><td>46</td><td>229</td><td>141</td><td>34</td><td>175</td></tr> <tr><td>2013</td><td>198</td><td>30</td><td>228</td><td>195</td><td>33</td><td>228</td></tr> <tr><td>2014</td><td>206</td><td>44</td><td>250</td><td>NA</td><td>NA</td><td>NA</td></tr> </table> <p>Suicide trends in all persons were mostly driven by the male suicide trends. In males, there was a general downward trend in overall age standardised suicide rates (all methods combined) from 169.9 per million in 2000 to 138.5 per million in 2007. However, rates increased by 16.5 % from 138.5 per million in 2007 to 161.3 per million in 2013. From 2010 to 2013 (i.e. the time period during which the programme was in place), male suicide rates from all causes increased by 14.4 % from 141 per million to 161.3 million.</p> <p>Similar to males, overall female suicide rates showed a decreasing trend from 56.5 per million in 2000 to 41.1 per million in 2007. However, since 2007, overall age standardised female suicide rates have remained relatively stable ranging from 43 to 44 per million.</p> <p>The male suicide rate increased from 6.0 per million in 2000 to 8.4 per million in 2013. From 2010 to 2013 male suicide rates increased by 31.3 % from 6.4 per million to 8.4 per million. Female suicide rates</p>	2004	137	41	178	127	43	170	2005	155	28	183	132	30	162	2006	165	57	222	152	36	188	2007	154	33	187	135	45	180	2008	153	39	192	163	36	199	2009	151	47	198	134	43	177	2010	163	46	209	146	61	207	2011	163	34	197	155	34	189	2012	183	46	229	141	34	175	2013	198	30	228	195	33	228	2014	206	44	250	NA	NA	NA
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			<p>remained relatively steady at about 2 per million from 2000 to 2013, with the exception of a small peak in 2010 when suicide rates were closer to 3 per million. RSSB data showed an upward trend in male rail suicides from 2009 onwards and female rail suicides from 2013 to 2014. In all persons, the proportion of suicides increased from 3.5 % in 2000 to 4.9 % in 2013. In men, the proportion of suicides increased from 3.7 to 5.3 % over the 14 year study period. In women, the proportion of suicides fluctuated over time; the highest proportion of suicides (6 %) was observed in 2010.</p> <p>Author's conclusions</p> <p>Industry-specific suicides accounted for a relatively small proportion of all suicide deaths throughout the time period.</p> <p>There is a lack of evidence for a clear impact of the programme on reducing suicide rates. It is unlikely that the original target of a 20 % reduction in suicide from 2010 to 2015 will be achieved.</p>
<p>Limitations identified by author ONS data and RSSB data on industry-specific suicides are not directly comparable among different groups. The study was unable to examine differences in suicide rates by region of death as these data were not available for this study.</p> <p>Limitations identified by review team Possibility of other suicide prevention or campaigns occurred during the study observation.</p>			

E.1.9 Till et al 2013

<p>Till Benedikt, Sonneck Gernot, Baldauf Gerhard, Steiner Elise, and Niederkrotenthaler Thomas (2013) Reasons to love life. Effects of a suicide-awareness campaign on the utilization of a telephone emergency line in Austria. Crisis 34(6), 382-9</p>							
<p>Author/year Till et al 2013</p> <p>Quality score -</p> <p>Study type</p>	<p>Number of participants Residents of Styria</p> <p>Characteristics of participants (2011)</p> <table border="1" data-bbox="553 1209 976 1311"> <tr> <td data-bbox="553 1209 763 1265"></td> <td data-bbox="763 1209 976 1265">Styria</td> </tr> <tr> <td data-bbox="553 1265 763 1311">Total population</td> <td data-bbox="763 1265 976 1311">1,211,506</td> </tr> </table>		Styria	Total population	1,211,506	<p>Intervention / Comparison</p> <p>Intervention: On March 31, 2011, the Telephone Emergency Service Graz – a crisis helpline service in Graz – available for all residents of Styria, initiated in cooperation with the crisis intervention foundation</p>	<p>Primary outcomes</p> <p>The number of phone calls in the study region increased from 4,439 in the control period to 4,649 (+4.7%) in the intervention period</p>
	Styria						
Total population	1,211,506						

<p>Experimental</p> <p>Aim of the study</p> <p>To examine the impact of the awareness campaign on helpline service utilization</p> <p>Location and setting</p> <p>Graz, Austria</p> <p>Length of study</p> <p>2011</p> <p>Pre-campaign: Jan to March</p> <p>Post-campaign: April to June</p> <p>Source of funding</p> <p>Not reported</p>	Total men	592,761	<p>WEIL (<i>Weiter im Leben</i> = On in Life) the local multimedia awareness campaign “Reasons to love life” with the aim of drawing public attention to suicide prevention and crisis intervention and to increase help-seeking behaviour in suicidal individuals.</p> <p>Billboards were shown throughout the federal state of Styria depicting joyful everyday-life situations stating: “There are many reasons to love life. If you do not find a reason, call us and we can talk about it.”</p> <p>The billboard advertisements consisted of 90 posters (841 × 1,189 mm) that were shown in Styria’s capital city of Graz from March 31 to May 8, 2011, and 10-s spots on electronic infosccreens in stations and on traffic junctions from April 15 to May 8, 2011. Furthermore, 170 posters (841 × 1,189mm) and 600 small placards (297 × 420 mm) were sent to community centres and psychosocial institutes in Styria, and 1,600 small placards (297 × 420 mm) were delivered to Styrian parishes</p> <p>The advertisements focused on men between 40 and 60 years of age, who account for a large part of suicides in Styria. Males have been shown to tend to avoid mental health care services in Austria, and are generally less likely than women to seek help from medical or counselling services and less frequently disclose mental health problems to their primary health care physician.</p> <p>The content messages of the campaign were designed by avoiding the use of the term <i>suicide</i>, by refraining from</p>	Jan-March 2011 (before)	April-Jun 2011 (after)	Effect (RR, 95%CI)	
	Total women	618,745		Total call number	4439	4649	
	Total population 0-18 years of age	218,815		Call rate per 100,000	366.40	384.73	1.22 (1.17, 1.27)
	Total population 19-40 years	709,298		Suicide related call			
	Total population >60 years	283,393		Total	20	8	
	Mean age	42.5		Per 100,000	1.65	0.66	0.47 (0.21, 1.06)
	Suicide	211		Per caller	0.004	0.001	
	Suicide rate (per 100,000)	17.5		Total men	7	1	
	Inclusion criteria	Not reported		Total women	13	7	
	Exclusion criteria	Not reported		Call for suicidality (own)	9	6	2.34 (0.21, 25.76)
		Call for suicidality (other)	1	2	0.58 (0.11, 3.19)		

The number of suicide-related phone calls dropped from 20 to 8 (-60.0%) in the study region.

The caller’s own suicidality was the most discussed topic among all suicide-related phone calls (50.0%), followed by family problems (46.4%), loneliness (42.9%), psychological

		<p>normalizing or glorifying suicidal behaviour, by reinforcing life-affirming activities, and by avoiding overemphasis of the perceived link between depression/crisis and suicide.</p> <p>The campaign was initiated with a press conference that involved journalists and public health professionals on March 29, 2011. Several local and national media outlets (newspapers, church bulletins, television and radio stations, and online media) featured reports on the initiation of the campaign. The campaign also included the launch of a local website on suicide prevention, advanced training for local journalists organized by the foundation WEIL, and three panel discussions on crisis intervention in April and May 2011 featuring the head of the Telephone Emergency Service Graz and other experts on this topic.</p> <p>Comparison:</p> <p>Comparing the phone calls at the Telephone Emergency Service Graz 3 months before the campaign to 3 months after the start of the campaign.</p>	<p>problems (37.5%), relationship (32.1%), death (30.4%), work (25.0%), physical problems (23.2%), trauma (21.4%), housing (17.9%), financial problems (17.9%), sexuality (16.1%), dependency (16.1%), suicidality of another person (16.1%), addiction (12.5%), and school (8.9%).</p> <p>Author's conclusion</p> <p>The campaign may have had some minor immediate impact on the utilisation of the telephones emerge service, but it did not seem to motivate suicidal individuals, to call.</p>
<p>Limitations identified by author There are no data on suicide-related phone calls at the Telephone Emergency Service prior to 2011. Therefore, we were unable to compare characteristics of calls with other years. The fact that suicide-related phone calls accounted for a relatively small amount of the overall phone calls at the Telephone Emergency Service, with a resulting small statistical power</p> <p>Limitations identified by review team Short term effect Completeness and accuracy of data reporting.</p>			

E.2 Qualitative studies

E.2.1 Robison et al 2013 and 2014

Mark Robison, Debbie Braybrook, and Steve Robertson (2014) Influencing public awareness to prevent male suicide. <i>Journal of Public Mental Health</i> 13(1), 40-50				
Robinson Mark, Braybrook Debbie, and Robertson Steve (2013) 'Talk' about male suicide? Learning from community programmes. <i>Mental Health Review Journal</i> 18(3), 115-127				
Study details	Research Parameters	Inclusion/ Exclusion criteria	Population	Results
<p>Author name and year</p> <p>Robinson et al 2014 (study 1)</p> <p>Robinson et al 2013 (study 2)</p> <p>Quality score</p> <p>-</p> <p>Study type</p> <p>Qualitative</p> <p>Aim of the study</p> <p>Study 1</p> <p>The paper explores how the public campaign supports a co-ordinated and</p>	<p>Data collection</p> <p>Phase 1 reviewed current database held by Samaritans, Breathing Space and North Lanarkshire A & E admission to examine whether the intervention led to increase used of crisis number.</p> <p>Phase 2 included a survey of public awareness of the campaign in North Lanarkshire.</p> <p>During the phase 2, the same months as the survey, interviews with 20 key stakeholders were held to examine campaign processes and targeting.</p> <p>Phase 3, 3 months later, 10 discussion events with men and women were held, each</p>	<p>Inclusion criteria</p> <p>Not reported</p> <p>Exclusion criteria</p> <p>Not reported</p>	<p>Participant numbers</p> <p>Survey: 500 members of the general public with quotas for age, gender, and location.</p> <p>Recruitment of members of the public was facilitated by "champions" of community networks such as football supporters, community sports and arts, and youth music festival volunteers, who were identified through the earlier stakeholder interviews.</p> <p>Interviews: 20 stakeholders</p> <p>Group discussion: 10 groups (3-6 in each group)</p> <p>Participant characteristics</p> <p>Not reported</p> <p>Intervention</p>	<p>Programme effectiveness</p> <p><u>Study 1</u></p> <p>The campaign raised the awareness of services of a substantial proportion of the general population. Among those with some awareness of the campaign (28 per cent of all survey respondents), 39 per cent (40 per cent of male respondents) said this made them more aware of services which could provide information or help prevent a suicide, while 40 per cent of respondents were already aware.</p> <p>The campaign may also have had some success in de-stigmatising public attitudes. There was a positive correlation between levels of campaign awareness and altered attitude in survey results (a Kendall's τ test indicated a significant relationships between level of campaign awareness and level of altered attitude, $t=0.19$, $p<0.01$).</p> <p>Thematic domains from the analysis:</p> <p><u>Awareness</u></p> <p><u>Study 2</u></p> <p>Discussion groups expressed the view that the campaign has had a considerable impact in raising the awareness of a substantial proportion of the general public, specifically about the Choose Life brand and using language with a sense of urgency and clear focus on intense distress and imminent action</p>

<p>community-based direction for</p> <p>suicide prevention work, and examines how good practice can be identified, spread, and sustained</p> <p>Study 2</p> <p>The purpose of the study is to examine the contribution of public awareness campaigning in developing community capacity toward preventing male suicide and explores emerging considerations for suicide prevention programme development</p> <p>Location and setting</p> <p>North Lanarkshire</p> <p>Source of funding</p> <p>Not reported</p>	<p>last 1 and half to 2 hours to provide insights concerning how, to what extent and for whom changes might have occurred.</p> <p>Method of analysis</p> <p>Interviews and discussion group data were digitally recorded, fully transcribed. Data were entered into NVivo and analysed thematically through descriptive and analytic coding with codes then clustering under theme headings.</p>		<p>Choose Life campaign in NL began in 2007 building on the national Choose Life campaign, launched in 2002, which aimed for a reduction in suicides of 20 per cent by 2013.</p> <p>The strategy highlights people affected by unemployment, in isolated or rural communities, recently bereaved, or homeless. In NL a particular focus was on the Choose Life national objective of “Awareness raising and encouraging people to seek help early”, and on young males.</p> <p>The programme aims to help reduce suicide levels, through increased awareness of crisis service numbers such as Samaritans and Breathing Space and challenging the stigma around suicide.</p> <p>The campaign was promoted with a social marketing approach to different age groups in targeted settings including pubs, pharmacies, libraries, workplace washrooms, Motherwell Football club, five-a-side football tournaments, taxis and buses, music festivals, and community centres, and through national media, using support materials such as billboards, posters, cards, DVDs, branded football products, newspapers, TV, and radio. Desired “intermediate” outcomes, expected to contribute to the long-term outcomes of suicide reduction, include: improved public access to information; increased public knowledge; and reduced cultural stigma.</p>	<p><i>“Previously you didn’t talk about it. The fact it was it was out there at football and on the TV [national TV advert], that changed people”</i> 26-35m</p> <p>Awareness was increased – and some stigma mitigated – when men saw the message routinely being endorsed, over time, within trusted settings where they normally go as a lifestyle activity.</p> <p><u>Attitude and behaviours</u></p> <p><u>Study 2</u></p> <p>Discussion group participants suggested that the attitudes of men, among those who were well aware of the campaign, were likely to have changed. Participants themselves asserted they were more open to talk about vulnerability, feeling low, or suicidal thoughts. <i>“Definitely helped me do something because I was a wee bit depressed a year ago and through Choose Life, getting over my problem I managed to help a couple of my friends”</i> 26-35 m.</p> <p><u>Study 1 & study 2</u></p> <p>The confidence and capacity of highly campaign-aware people, including young men, to talk to others in their community or to seek help, was likely to have powerfully increased,</p> <p>Among highly aware men, it “normalised” talk about suicide, and led to greater awareness that it is normal to feel “low” and to communicate concern about emotional well-being. More people could be watchful in the community, and less likely to stigmatise another’s distress: <i>We all agreed with that campaign we’d be more alert, more likely to talk to somebody</i> (over 36 m).</p> <p><u>Engaging with the public</u></p> <p><u>Study 1 and study 2</u></p> <p>Embedding campaigning in community settings helped to normalise men talking about suicide and de-stigmatise mental health. Here, trained community members such as taxi drivers supported the campaign message, talking with men, and signposting them to services.</p>
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				<p>Community members' informal networks have extended the campaign, for example young people contributing to music festivals (e.g. "Sound Minds") cascaded messages to peers. Building on these successes, a community development approach was advocated by stakeholders and members of the public, to spread and sustain the campaign.</p> <p>Author's conclusion</p> <p>The campaign raised the awareness of a substantial proportion of those targeted, and affected attitudes and behaviour of those who were highly aware. The community settings approach was effective in reaching younger men, but there were challenges targeting the public more selectively, and engaging communities in a sustained way.</p> <p>The study has reflected on insights from a complex suicide awareness-raising programme, exceptional and timely in its focus on targeted (male) sections of the public.</p> <p>The study has indicated the importance of understanding the intersection of factors concerning male identity, stigma and mental health, and other risk and protective factors, including community engagement, which can inform campaigns highlighting male talk about suicide within a health inequalities framework</p>
<p>Notes</p> <p>Limitations identified by author</p> <p>Not reported</p> <p>Limitations identified by review team</p> <p>Poor reporting of sampling strategy, data collection and data analysis.</p>				

Appendix F: GRADE tables

F.1 Suicide

Quality assessment							Number of event/participants		Effect		Committee confidence
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	before	after	Relative risk ratio (RR) (95% CI)	Absolute/mean differences	
Community suicide prevention											
1 (Ono et al 2013)	Experimental	Serious ¹	Not applicable (NA)	No serious ²	Serious ³	Japanese community	133/590073	102/57072 1	0.79 (0.61, 1.03)		LOW
Awareness campaign											
1 (Taylor et al 2016)	Observational	Serious ⁴	NA	No serious	No serious	None	166/40,000,000	228/42,285,007	1.32 (1.08, 1.61)		MODERATE
1. Misclassification bias 2. Interventions, population and outcomes are in line with review protocol 3. 95% CI of RR around point estimate crosses line of no effect which the committee agreed should be the minimal important difference 4. Whether population were exposed to campaign was unknown											

F.2 Suicide attempt

Quality assessment	Number of event/participants	Effect	Committee confidence
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No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	before	after	Relative risk ratio (RR) (95% CI)	Absolute/mean differences (95%CI)	
2 (Daigle et al 2006; Ono et al 2013)	Experimental	Serious ¹	No serious	No serious ²	Serious ³	none	67/591093 (11.3 per 100,000)	55/571741 (9.6 per 100,000)	0.85 (0.59, 1.21)	-	VERY LOW
<ol style="list-style-type: none"> 1. Selection bias (Daigle et al 2006) and misclassification bias (Ono et al 2013) 2. Interventions, population and outcomes are in line with review protocol 3. 95% CI of RR around point estimate crosses line of no effect which the committee agreed should be the minimal important difference 											

F.3 Suicide ideation

Quality assessment							Number of event/participants		Effect		Committee confidence
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	before	after	Relative risk ratio (RR) (95% CI)	Absolute/mean differences (95%CI)	
2 (Daigle et al 2006; Till et al 2013)	Experimental	Serious ¹	No serious	No serious ²	Serious ³	none	15/1416040 (1.1 per 100,000)	12/1212526 (1.0 per 100,000)	0.87 (0.41, 1.86)	-	VERY LOW
<ol style="list-style-type: none"> 1. Selection bias (Daigle et al 2016) and misclassification bias (Till et al 2013) 2. Interventions, population and outcomes are in line with review protocol 3. 95% CI of RR around point estimate crosses line of no effect which the committee agreed should be the minimal important difference 											

F.4 Help-seek (intention seeking help if suicidal)

Quality assessment	Number of event/participants	Effect	Committee confidence

No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Intervention (exposed)	Control (non-exposed)	Relative risk ratio (RR) (95% CI)	Absolute/mean differences	
Suicide prevention week and suicide prevention & help-seeking campaign											
Daigle et al 2006;	Experimental	Serious ¹	No serious ²	Serious ³	Serious ⁴	None	127/190 (66.8%)	529/830 (63.7%)	1.19 (0.86, 1.63)	+3.1%	VERY LOW
Silk et al 2017							167/5312 (3.1%)	90/3993 (2.3%)		+0.8%	
1. Only 19% of the sample exposed to the campaign (Daigle et al 2006) Students in control groups may exposure to campaign material (Silk et al 2017) 2. Visual inspection showed little variation, the estimated effect of Daigle et al crossing 1 but one of Silk et al (2017) does not cross. 3. Suicide prevention week targeted men aged 20-40 years (Daigle et al 2006); and university students (Silk et al 2017) 4. 95% CI of RR around point estimate crosses line of no effect which the committee agreed should be the minimal important difference											

F.5 Calls to helpline

Quality assessment							Number of event/participants		Effect		Committee confidence
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	before	after	Relative risk ratio (RR) (95% CI)	Mean differences (95%CI)	
Media campaign: suicide call											
1 (Oliver et al 2008)	Experimental	Serious ¹	NA	No serious ²	No serious ³	None	300/130000 (23.1 per 100,000)	389/130000 (29.9 per 100,000)	1.30 (1.12, 1.51)	-	VERY LOW
1 (Till et al 2013)	Experimental	Serious ¹	NA	No serious ²	No serious ³	None	20/1211506 (1.65 per 100,000)	8/1211506 (0.66 per 100,000)	0.40 (0.18, 0.91)	-	VERY LOW

Youth suicide prevention media campaign: call to crisis line											
1 (Jenner et al 2010)	Experimental	Serious ⁴	NA	No serious ²	No serious ³	None	-	-	-	1.59 (0.95, 2.24))	VERY LOW
It's Your call campaign for veterans: low dose (average daily calls)											
1 (Karras et al 2016)	RCT	Serious ⁵	NA	Serious ⁶	No serious	None	-	-	-	0.17 (0.11-0.23)	MODERATE
It's Your call campaign for veterans: high dose											
1 (Karras et al 2016)	RCT	Serious ⁵	NA	Serious ⁶	No serious	None	-	-	-	0.24 (0.16-0.32)	MODERATE
1. Misclassification bias 2. Interventions, population and outcomes are in line with review protocol 3. 95% CI of RR or MD around point estimate not crossing line of no effect which the committee agreed should be the minimal important difference 4. Campaign was not inactive in all post code areas. 5. Callers' exposure to the campaign were unclear (whether the caller made the call after exposing to the campaign) 6. Target populations were veterans											

F.6 Normative belief: suicide

Quality assessment							Mean score		Effect		Committee confidence
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	intervention	Control	Relative risk ratio (RR) (95% CI)	Absolute/mean differences (95%CI)	
Suicide prevention public service announcements: billboard vs no information (lower score indicates better normative belief about suicide)											

1 (Klimes-Dougan 2010)	RCT	Serious ¹	NA	No serious ²	Serious ³	All participants from one university	1.80 (0.79)	1.85 (1.09)	-	-0.05 (-0.33, 0.23)	LOW
Suicide prevention public service announcements: TV ad vs no information											
1 (Klimes-Dougan 2010)	RCT	Serious ¹	NA	No serious ²	Serious ³	All participants from one university	1.71 (0.68)	1.85 (1.09)	-	-0.14 (-0.41, 0.13)	LOW
<p>1. Selection bias (participation was voluntary)</p> <p>2. Interventions, population and outcomes are in line with review protocol</p> <p>3. 95% CI of MD around point estimate crosses line of no effect which the committee agreed should be the minimal important difference</p>											

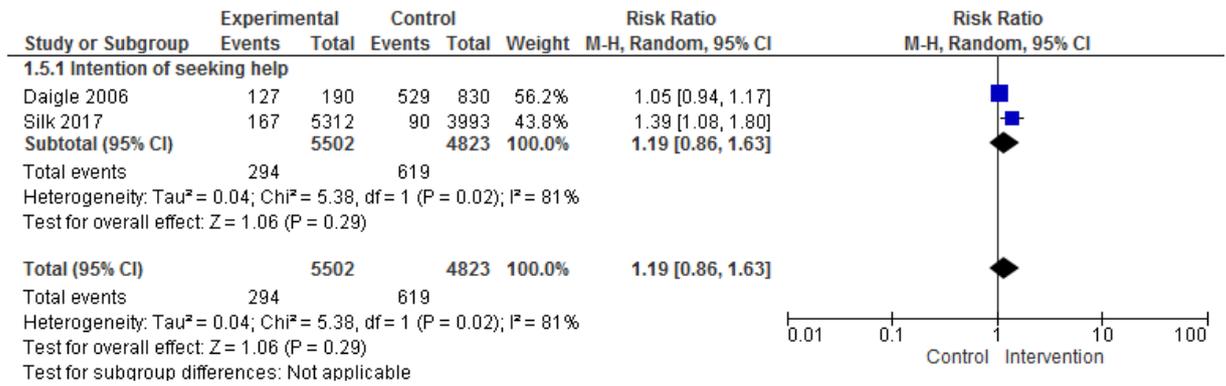
F.7 Attitude: help-seeking

Quality assessment							Mean score (at the end of follow-up)		Effect		Committee confidence
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	intervention	Control	Relative risk ratio (RR) (95% CI)	Absolute/mean differences (95%CI)	
Suicide prevention public service announcements: billboard vs no information (higher score indicates better help-seeking attitudes)											
1 (Klimes-Dougan 2010)	RCT	Serious ¹	NA	No serious ²	No serious ³	All participants from one university	2.51 (0.62)	2.76 (0.63)	-	-0.25 (-0.43, -0.07)	MODERATE
Suicide prevention public service announcements: TV ad vs no information											
1 (Klimes-Dougan 2010)	RCT	Serious ¹	NA	No serious ²	Serious ⁴	All participants from one university	2.82 (0.68)	2.76 (0.63)	-	0.06 (-0.13, 0.25)	LOW
Suicide prevention public service announcements: alternative billboard vs original billboard											

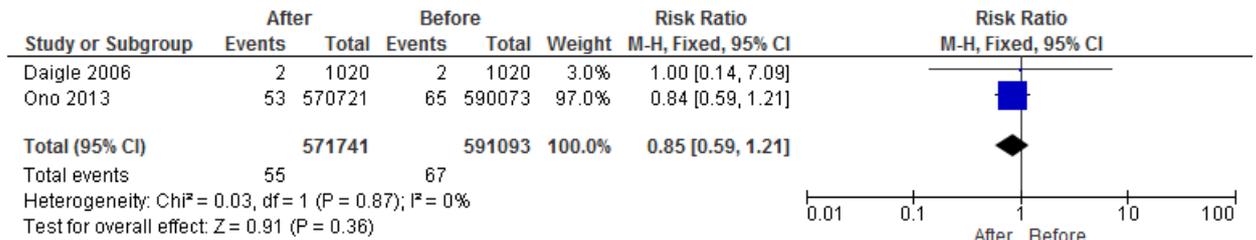
1 (Klimes-Dougan 2016)	RCT	Serious ¹	NA	No serious ²	No serious ³	All participants from one university	2.83 (0.68)	2.64 (0.64)	-	0.19 (0.09, 0.29)	MODERATE
Suicide prevention week: exposed vs non-exposed											
1 (Daigle et al 2006)	Experimental	Serious ⁵	NA	Serious ⁶	Serious ⁴	None	7.23 (1.58)	7.06 (1.61)		0.17 (-0.08, 0.42)	VERY LOW
<ol style="list-style-type: none"> 1. Selection bias (participation was voluntary) 2. Interventions, population and outcomes are in line with review protocol 3. 95% CI of MD around point estimate not cross line of no effect which the committee agreed should be the minimal important difference 4. 95% CI of MD around point estimate cross line of no effect which the committee agreed should be the minimal important difference 5. Only 19% of the sample exposed to the campaign. 6. Suicide prevention week targeted men aged 20-40 years. 											

Appendix G: Forest plot

Help-seeking



Suicide attempt



Suicide ideation



