



Pilot study evaluation of suicide prevention gatekeeper training utilising STORM in a British university setting

Linda Gask^{a*}, Nia Coupe^b, Damien McElvenny^a and Gill Green^c

^aCentre for Primary Care, Institute of Population Health, University of Manchester, Manchester, UK; ^bManchester Centre for Health Psychology, University of Manchester, Manchester, UK; ^cStorm Skills Training CIC Regent House Business Centre, Stockport, UK

ABSTRACT

Recent years have seen increasing awareness of the wide range of mental health problems faced by students. Gatekeeper training has been shown to have a positive impact on knowledge and attitudes about suicide prevention, although the evidence for skills acquisition is limited. We utilised the STORM[®] training package in an exploratory study to determine explore whether skills training could be successfully implemented in an educational establishment in the United Kingdom. In a pilot study assessing competence before and after the intervention there was evidence of acquisition of skills, improved attitudes and increased confidence. Further research should include a randomised controlled trial of such training.

ARTICLE HISTORY

Received 14 May 2015
Revised 2 May 2017
Accepted 22 May 2017

KEYWORDS

Suicide; self-harm; pastoral care; counselling in higher education; evaluation

Background

Recent years have seen increasing awareness of the wide range of mental health problems faced by students in higher education (Royal College of Psychiatrists, 2011) and a growing interest in suicide prevention in student populations across the world. The rate of suicide in universities in the U.S.A. has remained steady at around 7 per 100,000 students in recent years Schwartz (2011). However in the U.K. between 2007 and 2011, suicides by male students in full-time higher education grew by 36%, from 57 to 78 per annum, while female student suicides almost doubled from 18 to 34 (Office for National Statistics, 2012).

Bewick, Gill, Mulhern, Barkham, and Hill (2008), using an internet survey in 4 higher education institutions in the U.K., found that 29% of students described clinical levels of psychological distress and in 8% this was moderate to severe, or severe. Macaskill (2013) found that estimated prevalence rates of mental illness at one university equalled those of the general population (17.6%), according to a measure of 'caseness' on the General Health Questionnaire (GHQ-28), but only 5.1% of the sample were currently receiving treatment. In the U.S.A. the American College Health Association (2013) reported 31.3% of undergraduates had felt so depressed at any time during the previous 12 months that it was difficult to function; 5.9% had intentionally cut, burned, bruised or otherwise injured themselves; 7.4% had seriously considered suicide in the previous 12 months; and 1.5% had attempted suicide. Findings from a U.K. study suggested that:

... transitional periods at the beginnings and endings of the academic year appeared to provide a context which fed into the students' sense of being trapped in a position that they found unendurable ... the students in this study seemed, from the accounts of those who had known them well to be seeking an escape from what they experienced as an intolerable situation and to be opting for suicide as a means of avoiding further failure and distress. (Stanley, Mallon, Bell, & Manthorpe, 2009, p. 428)

CONTACT Linda Gask  linda.gask@manchester.ac.uk

*Linda Gask and Gill Green are both directors of Storm Skills Training CIC.

© 2017 Informa UK Limited, trading as Taylor & Francis Group

'Gatekeeper' training in suicide prevention

The term 'gatekeeper' refers to 'individuals who have face-to-face contact with large numbers of community members as part of their usual routine'. They may be trained to 'identify persons at risk of suicide and refer them to treatment or supporting services as appropriate' (Osteen, Frey, & Ko, 2014; U.S. Department of Health and Human Services Office of the Surgeon General and National Action Alliance for Suicide Prevention, 2012). 'Designated' gatekeepers are people who already work as helping professionals. 'Emergent' gatekeepers are community members who may not have been formally trained to intervene with someone at risk for suicide but emerge as potential gatekeepers if/when approached by someone at risk. Gatekeeper training has been widely implemented in many different settings including schools and universities, particularly in the U.S.A. (Cimini et al., 2014; Cross, Matthieu, Lezine, & Knox, 2010; Hashimoto et al., 2016; Tompkins & Witt, 2009; Wallack, Servaty-Seib, & Taub, 2013). Burnette, Ramchand, and Ayer (2015) reviewed the literature on behalf of the U.S.A. Department of Defense and explored the impact of training on four key factors that may influence an individual's decision to intervene with a person at risk of suicide knowledge, attitudes, reluctance to intervene and self-efficacy. They concluded:

The strongest evidence to date is that gatekeeper training can improve knowledge about suicide, but there is emerging research to suggest that it also can foster more adaptive beliefs about suicide prevention and decrease people's reluctance to intervene. The relationship between training and self-efficacy to intervene is more tenuous. These relationships have been shown in a number of settings and with different individuals. (Burnette et al., 2015, p. 12)

However, they also conclude that 'research on how improvements in these factors translate to intervention behavior is lagging', which echoes the findings of a previous review by Isaac and colleagues that the evidence for acquisition of novel *observable skills* in training of gatekeepers has been much more limited (Isaac et al., 2009).

Unsurprisingly mental health professionals are more knowledgeable about suicide compared with other occupations regardless of whether they have undergone gatekeeper training (Cross et al., 2011). Tompkins, Witt, and Abraibesh (2010) found that training improved high school teachers and administrators' knowledge and attitudes about suicide, but support staff either showed no change or negative shifts from pre- to post-training. This might be because teachers and administrators already had developed relationships with distressed students and were able to modify their conversations with students after training, whereas support or administrative staff may not have established those relationships.

Post-training support also seems to be important and Moore, Cigularov, Chen, Martinez, and Hindman (2011) found that supervisor and organisational support was positively related to reported intervention behaviour after training.

Applying the STORM intervention in a university setting

The STORM[®] intervention (Skills Training on Risk Management) is an example of gatekeeper training which incorporates didactic as well as interactive methods and behavioural rehearsal. It has previously been extensively implemented with both designated (mental health workers) and emergent gatekeepers (primary care professionals and community workers). The format of the intervention derives from adult learning theory (Reece & Walker, 2016), Bandura's Social Learning Theory (Bandura, 1986) and the published literature on changing the behaviour of health-care workers (Oxman, Thomson, Davis, & Haynes, 1995). Addressing change in attitudes requires interaction with reflection on participants' own experiences, the experiences of peers and demonstration of filmed interactions. If participants' current beliefs are challenged in an interactive learning setting, then, with rehearsal, they may also change their practice to reflect the change in beliefs (otherwise they will experience cognitive dissonance, usually experienced as anxiety or frustration). The approach adds to previous gatekeeper training approaches in educational settings because of the

incorporation into training of role-play and video feedback of performance. This enables acquisition of specific communication skills. Evaluation in health-care settings has demonstrated an impact on health professionals' attitudes, confidence and use of specific communication skills and strategies related to suicide prevention (Appleby et al., 2000; Gask, Dixon, Morriss, Appleby, & Green, 2006; Morriss, Gask, Battersby, Francheschini, & Robson, 1999). In this study a new generic version of STORM[®] adapted for training across a wide range of different settings was utilised in a higher educational setting in an English University. A wide variety of different staff in a semi-residential university setting come into contact with potentially suicidal students. Therefore, the aim of this exploratory study was to train not only designated gatekeepers (counselling and support staff), but also others who might be considered as emergent gatekeepers in this context, including administrative and security staff. The research questions were: what was the impact of the training intervention on the skills, attitudes, confidence and satisfaction of gatekeepers? And what were their views of the impact of training on their everyday work?

Method

Settings and participants

Staff and student support services across the campus at the University of Manchester were invited by the University Counselling Service to participate in the training course and its evaluation. Participants were self-selected and included staff directly involved with students, and staff with responsibility for student health and welfare (e.g. Counsellors, Teaching Administration, Teaching Staff, Student Support and Services, Security/Estates and Nightline – a telephone support service for students). Invitation was by e-mail so it is not possible to specify a formal invitation and response rate for the evaluation. No specific attempts could be made to further boost recruitment via departments as the invitation was sent out by a third party (the counselling service).

We did not carry out formal sample size estimation, but aimed to recruit 30 participants. Lancaster, Dodd, and Williamson (2014) citing Browne (1995) state that for a pilot study (such as this) a general rule of thumb is to take 30 participants or greater to estimate a parameter, following which the pilot study should be used to calculate the sample size required for the full-scale evaluation – a Randomised Control Trial, of the intervention. Ethical approval was granted by the University of Manchester Research Ethics Committee.

Twenty staff with designated or emergent gatekeeper roles in the University participated in the training study, in four professionally mixed groups of four and seven participants, between November 2011 and January 2012. The characteristics of the participants including their roles are shown in Table 1. Nine of the 20 (mostly from student counselling, welfare and disability services) had received some previous relevant training (see Table 1), usually in the form of in-house training provided by local psychiatric services, or from the counselling service within the University. All participants completed the before and after assessments (see below) but two participants (10%) did not complete the three-month assessment.

The intervention

The original STORM[®] training intervention was adapted (see below) to make it more suitable for training in non-health-care settings. Training was carried out by one of the authors who is an experienced STORM trainer and took place over one day. It comprised two modules: (a) understanding self-harm, and assessment of suicide risk and (b) immediate management of suicide risk and safety planning (what to do next and put in place to help the student and ensure safety).

Each of the two STORM[®] training modules lasted for about two hours and involved four stages. First participants were provided with a brief lecture about the essential facts they needed to know about each of these two topics, and the talking skills they needed to acquire (e.g. how to raise the

Table 1. Summary of participants.

Characteristic	Number (percentage) or mean (standard deviation)
<i>Sex</i>	
Male	4 (20)
Female	16 (80)
<i>Age</i>	41.8 (11.3)
<i>Country of birth</i>	
England	15 (75)
France	1 (5)
Germany	1 (5)
Ghana	1 (5)
U.S.A.	1 (5)
Wales	1 (5)
<i>Ethnicity</i>	
Caucasian	19 (95)
Black African	1 (5)
<i>Job title</i>	
Counsellor	2 (10)
Disability advisor	2 (10)
First aid coordinator/trainer	1 (5)
Manager pastoral care	1 (5)
Student advisor	3 (15)
Lecturer	2 (10)
Programme coordinator	1 (5)
Security officer	2 (10)
Occupational health advisor	1 (5)
Student support/welfare officer	4 (20)
Support services manager	1 (5)
<i>Previous training reported by 9 (45%) participants</i>	
1. One day suicide prevention training with the counselling service	
2. Assessing risk – in-house training with psychiatrist/counselling service plus day with mental health liaison team at hospital	
3. In-house talk from MH liaison team	
4. In-house training from psychologist and psychiatrist	
5. Training in suicide awareness and personality disorder from psychiatric nurse (4 hours)	
6. Session delivered by university counselling service	
7. Supporting students mental health course with some counselling skills training	
8. Training as a Samaritan volunteer	
9. University run course	

topic of suicide in a conversation; ascertain whether any specific plans had been made; agreeing an immediate 'safety' plan and discussion with the student whether they would be willing to consult mental health services). This lasted about for 40 minutes with opportunities for participants to ask questions throughout. They were then shown a 10 minute recording of a student and campus health worker demonstrating these skills before being asked to practice them for 10 minutes in role-play, working in triads (one person playing a student, a second playing a member of university staff and the third acting as the observer), using scenarios based on common examples of student problems which were prepared for this session. After the role-play concluded all three participants in each triad were asked to reflect and feed back to each other in turn about what went well in the role-play, and what might have been done differently. During the role-play two volunteer participants were simultaneously *filmed* as they role-played *the same scenario* as the rest of the group, and this was then played back to the whole group, who were once again invited to identify and comment what went well in the role-play, and what might have been done differently. Discussion throughout centred on participants' experience with students who were suicidal. This four-stage process was repeated in the afternoon session on immediate management, which was followed by general discussion about how what had been learned might be translated into practice in the setting of higher education. The total training time was approximately five hours.

The version of training utilised was less 'health' focused than that used in previous studies and structured in a more 'generic' format in order that context could be added according to the audience. Specific information was added about the higher education context with examples and content specific to higher educational institutions. All participants gave written consent to take part in the evaluation of the course.

Study design

This was an exploratory pilot study examining competence before and after administration of a training intervention (Gask, Usherwood, Thompson, & Williams, 1998; Morriss et al., 1999).

Evaluation

Assessments were carried out at three time points (immediately before and after training, and three months later to assess longer term change) using very similar methods to those utilised in previous studies of STORM® training.

Assessment tools

Filmed interview: Participants were filmed carrying out a 10 minute role-played with an actor playing a 'student' who was potentially suicidal (see Box 1). The filmed interviews were then rated in random order by an independent assessor (blind to whether they were pre- or post-training) using a shortened version of a rating tool, which had been developed for an earlier study (Morriss et al., 1999). Certain sections and specific items of this rating tool, which were irrelevant to a non-clinical setting, were excluded.

Box 1. Actor's briefing notes for role-play skills evaluation

Module being acted: Assessment of suicide risk

Props: Books, file

Aim of role: To assess suicidal intent

Name: Amy/James

Age: 20 years old

Key characteristics in role

You are stressed and agitated. You feel pressured, 'getting nowhere fast' and that the situation is hopeless. You can't concentrate, drinking more and have started cutting to help you cope with feelings of being overwhelmed. You feel more in control and a sense of relief when you see blood. You have started to think about suicide as the cutting is becoming less effective at relieving the stress. Your mood is worsening with increased anxiety.

Background – setting the scene

You are finding the course workload in this final year overwhelming. You are late with 3 of the assignments and there are exams looming. You have started to drink more to cope with the stress. Whilst drunk, and for the first time, you cut yourself with a paperclip. You started by continually scratching the same area of skin until drawing blood. It felt good making you feel at ease with yourself. You adopted this coping strategy for a few months graduating to a razor blade when the scratching became ineffective. Your cutting is getting more frequent and more serious. Your mood is worsening and you have a bleak view of the future. You have started to think about suicide as an option to 'get away from it all'. You have thought about taking tablets with alcohol but have no definite plan. You are spending more time in your room isolating yourself from your housemates.

Scene

You have been asked to see the Tutor to discuss the lack of progress with your assignments. The Tutor becomes aware during the meeting that you are not coping well and decides to ask further questions about your current mental health, self-harming/injuring behaviour and suicidal intent.

Attitudes: Attitudes were assessed using the Attitudes to Suicide Prevention Scale (ASPS) (Herron, Ticehurst, Appleby, Perry, & Cordingley, 2001) (see Table 2 for content) – a brief self-rated 14 item questionnaire with satisfactory internal consistency (Cronbach's $\alpha = 0.77$) and test-retest reliability (correlation coefficient $0.85 \ p < .001$).

Table 2. Suicide risk assessment and management skills in STORM trained staff pre and post-training video assessment (range of attempt indicates greater skill).

Individual skills	Time 1 (pre-training)			Time 2 (post-training)			<i>p</i> Value*
	No attempt	Attempts	Attempts and some degree of expansion	No attempt	Attempts	Attempts and some degree of expansion	
<i>Assessment of problems</i>							
Asks about use of alcohol	10	5	5	6	3	11	0.01
Ask about use of drugs	18	2	0	20	0	0	0.16
Asks about/checks for symptoms of depression	8	6	6	4	10	6	0.36
<i>Assessment of suicidal intent</i>							
Explores hopelessness	17	0	3	18	2	0	0.29
Explores views of future	20	0	0	19	1	0	0.32
Explores wishes to be dead	16	2	2	16	2	2	0.71
Explores suicidal thoughts	14	4	2	2	7	11	<0.01
Explores specific plans for suicide	17	3	0	4	9	7	<0.01
Explores measures to prevent detection	20	0	0	20	0	0	1.00
Explores factors which make suicide more likely	8	10	2	3	10	7	0.01
Explores factors which make suicide less likely	20	0	0	17	2	1	0.08
Explores previous suicide attempts	19	1	0	19	1	0	1.00



<i>Immediate management</i>	No attempt	Attempts	Attempts and some degree of expansion		No attempt	Attempts	Attempts and some degree of expansion		
Assesses availability of support	4	4	12		1	8	11		0.56
Assesses whether still has access to any lethal methods of suicide	19	1	0		15	4	1		0.03
Attempts to remove means of lethality	No 20		Yes 0		No 18		Yes 2		0.16
	No attempt	Attempts but no urgency/time frame	Appropriate time frame according to risk		No attempt	Attempts but no urgency/time frame	Appropriate time frame according to risk		
Arranges contact with appropriate health-care worker because of suicide risk	4	6	10		7	7	6		0.62
	No attempt	Attempts	Attempts with some degree of expansion	Full attempt to activate support	No attempt	Attempts	Attempts with some degree of expansion	Full attempt to activate support	
Overall rating of active support seeking	2	11	6	1	6	7	4	3	0.63
	No attempt	Attempts	Attempt with some degree of expansion	Full attempt to improve hopefulness	No attempt	Attempts	Attempt with some degree of expansion	Full attempt to improve hopefulness	
Overall rating of improving hopefulness	10	8	2	0	15	5	0	0	0.11

*Wilcoxon-signed ranks test.

Confidence: Participants' perceived level of confidence in assessing and helping a suicidal person was measured using a 10 cm self-completed visual analogue scale adapted for higher education participants from a scale used in previous studies (see Table 3 for content).

Satisfaction: Participants were asked to complete a brief paper questionnaire asking about satisfaction with the training received (specifically considering their views of the relevance of the course and usefulness to their everyday work). This comprised 7 items each rated on a 3-point scale (not-at-all, somewhat and definitely) with space for free text comments.

Impact on practice: A paper questionnaire was administered which enquired about participants' views of the likely impact, on their everyday work, of the training they had received. (Five items rated on 10 cm visual analogue scale with space for free text comments on the utility of each of the training modules.)

Before training at baseline (T1) participants completed the role-played meeting, ASPS and confidence scales. Immediately after training (T2) these were repeated with the addition of the satisfaction questionnaire. Three months later (T3), the ASPS and confidence scales were repeated with the addition of the impact on practice questionnaire.

Analysis

Rate-rater reliability of the interview assessment tool was carried out by the blinded assessor on a random sample of 10 interviews. At least 70% agreement was achieved for all items except for 'assessment of availability of support' (50%) and 'overall rating of improving hopefulness' (60%). Single data entry was carried out, but the data were checked against the source material.

Quantitative data were analysed using SPSS software (SPSS 20, 2014). A non-parametric test (Wilcoxon-paired signed ranks test for ordinal data) was used for the filmed interview and attitudes data, and a parametric-paired *t*-test for the confidence data. To control for inflated Type I error rate associated with multiple significance testing, a more stringent alpha of $p < .01$ (2-sided) was adopted.

Table 3. Attitudes to suicide prevention pre- and post-training and 3 months later (reduction in score indicates positive change in attitude).

No.	Item Attitudes (score 1–5 on each item higher score = negative attitude except for 14)	Baseline <i>N</i> = 20 Mean (SD)	Post- training <i>N</i> = 20 Mean (SD)	<i>P</i> *	3 months post- training <i>N</i> = 18 Mean (SD)	<i>P</i> *
1	I resent being asked to do more about suicide	1.6 (0.6)	1.4 (0.6)	0.05	1.4 (0.6)	0.18
2	Suicide prevention is not my responsibility	1.6 (0.7)	1.5 (0.5)	0.48	1.7 (0.6)	0.21
3	Making more funds available to the appropriate health services would make no difference to the suicide rate	1.8 (0.7)	1.7 (0.7)	0.37	2.2 (1.2)	0.29
4	Working with suicidal patients is rewarding	3.6 (0.6)	3.5 (1.1)	0.89	3.3 (0.9)	0.27
5	If people are serious about committing suicide they don't tell anyone	2.4 (0.7)	1.8 (0.8)	0.02	1.9 (0.8)	0.21
6	I feel defensive when people offer advice about suicide prevention	1.7 (0.6)	1.7 (0.9)	0.89	1.9 (1.0)	0.52
7	It is easy for people not involved in clinical practice to make judgements about suicide prevention	2.7 (1.0)	3.4 (1.1)	0.07	3.3 (1.0)	0.05
8	If a person survives a suicide attempt, then this was a ploy for attention	1.7 (0.6)	1.5 (0.5)	0.25	1.4 (0.5)	0.16
9	People have the right to take their own lives	3.3 (0.9)	3.4 (0.9)	0.66	3.3 (0.9)	1.00
10	Since unemployment and poverty are the main causes of suicide there is little that an individual can do to prevent it	1.7 (0.5)	1.5 (0.5)	0.06	1.6 (0.5)	0.53
11	I don't feel comfortable assessing for suicide risk	2.9 (1.0)	2.0 (0.8)	<0.01	2.1 (0.9)	<0.01
12	Suicide prevention measures are a drain on resources, which would be more useful elsewhere	1.5 (0.5)	1.4 (0.5)	0.66	1.4 (0.5)	1.00
13	There is no way of knowing who is going to commit suicide	2.9 (1.1)	2.0 (0.9)	0.02	2.1 (0.8)	<0.01
14	What proportion of suicides do you consider preventable? (none-all)	3.2 (0.8)	3.7 (0.7)	<0.01	3.8 (0.7)	0.04

*Wilcoxon-signed ranks test.

Free text comments provided in the satisfaction and impact on practice questionnaires were collated and analysed thematically, while recognising that these were not formal 'qualitative' data. Quotations are not labelled to preserve confidentiality.

Results

Impact on skills

Table 2 shows the mean skills' ratings between baseline and immediately post-training from application of the interview assessment tool. Significant change was seen on three items: 'asking about alcohol', 'exploring suicidal thoughts' and 'exploring specific plans'. Participants clearly spent more time overall on assessment of suicide risk (quite appropriately) in the post-training interviews before moving on to immediate management of the problem (agreeing a plan on what should happen next for the student) and given that the role-play recording was only 10 minutes in duration (all interviews were the same length in order for them to be rated blind). Therefore, drawing conclusions from observed changes in immediate management skills is difficult. However, no attempt was made to formally quantify these differences due to the difficulty in assessing accurately time taken up by statements concerned with assessment and immediate management, which were often contiguous.

Total (sum of individual) scores for the complete scale and for each subscale in Table 2 have not been reported as they were not considered to be meaningful, however Wilcoxon-signed ranks tests were carried out on the total scale score ($z = -3.55$, $p < .01$) assessment only ($z = -3.81$, $p < .01$) and immediate management ($z = -1.50$, $p = .13$).

Impact on attitudes

Table 3 shows changes in mean scores on the ASPS before, immediately after and 3 months after training. From before training to immediately after, all changes were in the expected direction and changes for 2 of the 14 items were statistically significant ($p < .01$) 'I don't feel comfortable assessing for suicide risk' and 'there is no way of knowing who is going to commit suicide'. From before training to three months afterwards there were few changes (and two participants did not complete the three-month assessment).

Impact on confidence

Table 4 shows scores for self-rated assessment of (perceived) confidence, before, immediately after and three months post-training. Compared with before training, there were statistically significant improvements in perceived level of confidence, both immediately after training and three months post-training. This improvement in scores was maintained after three months, although there was some evidence that confidence levels had reduced slightly from the higher levels reported immediately after training.

Satisfaction

Seventy-five per cent of participants reported that they 'definitely enjoyed the course' and definitely found the skills and techniques acquired on the course relevant to be their work/practice. Eighty-five per cent found the DVD demonstration a useful way of teaching the skills (see Table 5). Eighty per cent definitely found the role rehearsal exercise useful (one not at all). Comments on this ranged from 'I generally find role-playing unhelpful but can see now, for many participants, it is a good way to learn' to 'I found it very confusing having done one role-play this morning, watched two others do the same thing, watch a training video during the afternoon'. This referred to the multiple tasks of being both on one occasion observer and participant on another required by the training.

Table 4. Confidence in dealing with suicide risk pre- and post- training and 3 months later (increase in scores indicates increase in confidence).

No.	Item	Baseline N = 20 Mean (SD)	Post- training N = 20 (Mean (SD)	P*	3 months post- training N = 18 Mean (SD)	P*
1	I am confident that I have the interview skills to use my time well with a student who is suicidal	46.3 (19.9)	73.1 (16.2)	<.01	68.7 (15.6)	<.01
2	After seeing a student once I would be confident that I could recognise potential suicide risk	37.3 (15.4)	68.8 (19.4)	<.01	60.1 (19.1)	<.01
3	I feel confident that I could differentiate a mild depression/ low mood from a suicide risk	44.7 (23.7)	70.8 (19.3)	<.01	66.4 (19.4)	<.01
4	I am confident that I have the interview skills to use my time well with a student who has self-harmed	44.9 (24.4)	70.7 (13.9)	<.01	68.2 (15.4)	<.01
5	After seeing a student once I would be confident that I could recognise potential for self-harm	35.3 (21.0)	67.6 (16.9)	<.01	65.5 (16.3)	<.01
6	I feel confident that I could differentiate between self-harm and suicide risk	40.1 (23.4)	67.3 (16.7)	<.01	63.8 (20.4)	<.01
7	I am confident in helping keep safe a student thinking of suicide	34.8 (18.0)	68.9 (19.3)	<.01	66.2 (16.9)	<.01

*Paired t-test.

Of the 12 who saw themselves on video, 7 (58%) definitely found the feedback sessions useful and all participants who answered (1 did not respond to this question) thought the content of the course was 'about right'. One participant noted that the content of the course was a great deal to cover in one day 'extremely interesting day, however very intensive. I would recommend it to my colleagues'.

Impact on practice

Impact on everyday working practice was rated on three 10 cm visual analogue scales ranging from extremes labelled 'not at all' to 'very often'. For 'overall I have been able to use elements gained from the STORM® course ...' the range of scores was 12–84 with a mean of 50.1. For 'I have utilised the method of assessing degree of suicidal risk ...' the range was 2–84 with a mean of 46.7; and for 'I have utilised the method of safety planning to help a person stay safe ...' the range was 2–83 with a mean of 43.7.

In response to a request for comments on the session on 'assessing risk' several participants noted the value of knowing what questions to ask: 'being aware of the questions and acting on the replies ... I feel more confident about asking difficult questions'.

Table 5. Satisfaction with the training course.

No.	Item	Not at all number (%)	Somewhat number (%)	Definitely number (%)
1	Did you enjoy the STORM course?	0 (0)	5 (15)	15 (75)
2	Did you find the training disc a useful way of teaching the various skills/techniques?	0 (0)	3 (15)	17 (85)
3	Did you find the skills/techniques taught on the course useful/ relevant in terms of your work/practice?	0 (0)	5 (25)	15 (75)
4	Did you find the role rehearsal useful in practising the various skills/ techniques?	1 (5)	3 (15)	16 (80)
5	Did you find it useful to watch yourself on film in the 'professional' role? (only if applicable n = 12)	1 (9)	4 (33)	7 (58)
6	Did you find the group feedback sessions useful?	0 (0)	2 (10)	18 (90)
7	Do you think that the content of the course could have been different? (n = 19)	Too much detail 0 (0)	Not enough detail 0 (0)	About right 19 (100)

There were differing views of the session on immediate management (what to do next including agreeing on a 'safety plan') with some viewing this as very useful and thought provoking:

I found this module useful in terms of introducing the idea that a care provider should take more direct responsibility for the wellbeing of their clients when a disclosure is made that requires immediate action. For example, it would be no good to advise my client to visit the hospital if they disclose that they are intending to visit the hospital that evening. I feel it is negligent to not take them to the hospital and make sure they got the help they needed.

However, another participant was concerned that discussion about what to do next to help the student deflected from the need to ensure appropriate referral: 'Too much emphasis on doing a safety plan rather than ensuring the person at risk obtained professional help'. Concern was also expressed about the lack of back up from mental health services when students were referred to them by those working in counselling or occupational health services.

Discussion

Significant improvement in scores measuring skills, attitudes and confidence were demonstrated following an exploratory pilot study of gatekeeper training of university staff using the generic version of the STORM[®] training package, both immediately and three months after the intervention. After training participants asked more frequently about the use of alcohol, specifically explored suicidal thoughts and asked about plans. Participants commented about the importance of knowing which questions to ask as a result of training. Concern was expressed about the lack of back up from mental health services.

Previous research on gatekeeper training, discussed in the introduction to this paper, has similarly demonstrated an impact of training on attitudes, confidence and self-reported competence. This study specifically provides evidence for a positive impact of a novel form of gatekeeper training (STORM[®]) on observed skills (Isaac et al., 2009), and further supports the need for behavioural rehearsal in acquisition of these skills (Cross et al., 2010; Pasco, Wallack, Sartin, & Dayton, 2012).

A specific strength of this study is the collection and blind rating of role-played interviews before and after training. A weakness of many educational interventions is their failure to evaluate beyond self-reported improvements in knowledge, attitudes and confidence, and consider real (rather than reported potential) behavioural change. However, the major weaknesses of this study are the small sample size – it was underpowered with a smaller sample size than originally intended (during the time frame available for providing training we were unable to increase the number recruited), and the before–after study design. It is also possible that the groups with mixed levels of experience and training may have had an impact on the results. The support and counselling staff (designated gatekeepers) have different needs from such a programme than, for example, security staff (emergent gatekeepers) in terms of the skills they require to help students in crisis and may (as noted earlier) respond in different ways to training, however our numbers from each group were too small to examine such potential differences. Therefore, while we acknowledge the limitations of this pilot study, we consider it not only adds to the literature but provides a foundation for future research. Work is required to develop the Interview Assessment Tool and determine the optimal aggregate score to use as a primary outcome before further evaluation of training is carried out, but a multi-centre randomised controlled trial is required (as the acknowledged gold standard for evaluating interventions).

We also acknowledge that gatekeeper training is only one part of an effective suicide prevention programme (Wallack et al., 2013), and other factors must be considered in its implementation, in particular: selection of who it is appropriate to train as we have noted above; institutional buy-in to support the implementation of training; policies and procedures to ensure quality and safety and the surrounding health-care services which are able to receive referrals. The perceived lack of support from mental health services outside the university was of particular concern in this case. The university Student Mental Health Policy states that students with mental health difficulties can

access counselling, occupational health and disability support services. However, when more specialist help was required participants from the university services found it difficult to access specialist support for students when a referral was made into local mental health services, primarily due to the high severity threshold for acceptance of such a referral. Training must form one part of a comprehensive university suicide prevention strategy including close liaison with local mental health services.

On the basis of this pilot study, a randomised controlled trial of STORM® training is indicated with nested qualitative research to explore the impact of such training on participants in greater depth, and with particular attention to the specific context of the higher education setting and the needs of particular staff groups.

Conclusion

Utilising a modified STORM® suicide prevention training programme, an exploratory pilot study demonstrated that designated and emergent gatekeepers in a university setting not only improved attitudes and increased confidence, but were also able to acquire specific skills. Further research should include a randomised controlled trial of this form of training and explore the differing training needs, and benefits from training, of both designated and emergent gatekeepers in this setting.

Acknowledgements

We acknowledge the collaboration of the staff of the University of Manchester who participated in this project.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Linda Gask is Emerita Professor of Primary Care Psychiatry at the University of Manchester. She has extensive experience in developing and evaluating interventions to improve the mental health skills of front-line health and social care staff, and previously worked, before retirement, as a consultant psychiatrist in the National Health Service.

Nia Coupe is a Ph.D. student at the Manchester Centre for Health Psychology at the University of Manchester. She has several years' experience working in mental health research, with a focus on qualitative methods and long-term conditions.

Damien McElvenny is an epidemiologist and biostatistician. He is principal epidemiologist at the Institute of Occupational Medicine, Honorary Senior Research Fellow at the University of Manchester and an independent consultant. He has over 30 years' experience of work on epidemiological studies and randomised controlled clinical trials.

Gill Green is CEO of STORM Skills Training CIC and STORM Project Director at the University of Manchester. She has extensive experience developing and evaluating the STORM training programme and evaluated dissemination of the STORM intervention in health-care settings for her Ph.D.

References

- American College Health Association. (2013). *National College Health Assessment (reference group executive summary)*. Hanover, MD: Author.
- Appleby, L., Morriss, R., Gask, L., Roland, M., Lewis, B., Perry, A., ... Faragher, B. (2000). An educational intervention for front-line health professionals in the assessment and management of suicidal patients (The STORM Project). *Psychological Medicine*, 30(4), 805–812.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bewick, B. M., Gill, J., Mulhern, B., Barkham, M., & Hill, A. J. (2008). Using electronic surveying to assess psychological distress within the UK student population: A multi-site pilot investigation. *E-Journal of Applied Psychology*, 4(2), 1–5.
- Browne, R. H. (1995). On the use of a pilot sample for sample size determination. *Statistics in Medicine*, 14(17), 1933–1940.

- Burnette, C., Ramchand, R., & Ayer, L. (2015). *Gatekeeper training for suicide prevention: A theoretical model and review of the empirical literature*. Santa Monica, CA: Rand Corporation.
- Cimini, M. D., Rivero, E. M., Bernier, J. E., Stanley, J. A., Murray, A. D., Anderson, D. A., ... Bapat, M. (2014). Implementing an audience-specific small-group gatekeeper training program to respond to suicide risk among college students: A case study. *Journal of American College Health*, 62(2), 92–100.
- Cross, W., Matthieu, M. M., Lezine, D., & Knox, K. L. (2010). Does a brief suicide prevention gatekeeper training program enhance observed skills? *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, 31(3), 149–159.
- Cross, W. F., Seaburn, D., Gibbs, D., Schmeelk-Cone, K., White, A. M., & Caine, E. D. (2011). Does practice make perfect? A randomized control trial of behavioral rehearsal on suicide prevention gatekeeper skills. *The Journal of Primary Prevention*, 32(3–4), 195–211.
- Gask, L., Dixon, C., Morriss, R., Appleby, L., & Green, G. (2006). Evaluating STORM skills training for managing people at risk of suicide. *Journal of Advanced Nursing*, 54(6), 739–750.
- Gask, L., Usherwood, T., Thompson, H., & Williams, B. (1998). Evaluation of a training package in the assessment and management of depression in primary care. *Medical Education*, 32(2), 190–198.
- Hashimoto, N., Suzuki, Y., Kato, T. A., Fujisawa, D., Sato, R., Aoyama-Uehara, K., ... Otsuka, K. (2016). Effectiveness of suicide prevention gatekeeper-training for university administrative staff in Japan. *Psychiatry and Clinical Neurosciences*, 70(1), 62–70.
- Herron, J., Ticehurst, H., Appleby, L., Perry, A., & Cordingley, L. (2001). Attitudes toward suicide prevention in front-line health staff. *Suicide and Life-Threatening Behavior*, 31(3), 342–347.
- Isaac, M., Elias, B., Katz, L. Y., Belik, S. L., Deane, F. P., Enns, M. W., & Sareen, J. (2009). Gatekeeper training as a preventative intervention for suicide: A systematic review. *The Canadian Journal of Psychiatry*, 54(4), 260–268.
- Lancaster, G. A., Dodd, S., & Williamson, P. R. (2004). Design and analysis of pilot studies: Recommendations for good practice. *Journal of Evaluation in Clinical Practice*, 10(2), 307–312.
- Macaskill, A. (2013). The mental health of university students in the United Kingdom. *British Journal of Guidance & Counselling*, 41(4), 426–441.
- Moore, J. T., Cigularov, K. P., Chen, P. Y., Martinez, J. M., & Hindman, J. (2011). The effects of situational obstacles and social support on suicide-prevention gatekeeper behaviors. *Crisis*, 32(5), 264–271.
- Morriss, R., Gask, L., Battersby, L., Francheschini, A., & Robson, M. (1999). Teaching front-line health and voluntary workers to assess and manage suicidal patients. *Journal of Affective Disorders*, 52(1), 77–83.
- Office for National Statistics. (2012). Deaths by suicide for students aged 18 and above (2007–2011). Retrieved from <http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hoc-data/health-and-social-care/november-2012/index.html>
- Office of the Surgeon General (US), & National Action Alliance for Suicide Prevention (US). (2012). 2012 National strategy for suicide prevention: Goals and objectives for action: A report of the US Surgeon General and of the National Action Alliance for Suicide Prevention.
- Osteen, P. J., Frey, J. J., & Ko, J. (2014). Advancing training to identify, intervene, and follow up with individuals at risk for suicide through research. *American Journal of Preventive Medicine*, 47(3), S216–S221.
- Oxman, A. D., Thomson, M. A., Davis, D. A., & Haynes, R. B. (1995). No magic bullets: A systematic review of 102 trials of interventions to improve professional practice. *Canadian Medical Association Journal*, 153(10), 1423–1431.
- Pasco, S., Wallack, C., Sartin, R. M., & Dayton, R. (2012). The impact of experiential exercises on communication and relational skills in a suicide prevention gatekeeper-training program for college resident advisors. *Journal of American College Health*, 60(2), 134–140.
- Reece, I., & Walker, S. (2016). *Teaching, training and learning: A practical guide*. Sunderland: Business Education Publishers.
- Royal College of Psychiatrists. (2011). *Mental health of students in higher education* (College Report CR166). London: Author.
- Schwartz, A. J. (2011). Rate, relative risk, and method of suicide by students at 4-year colleges and universities in the United States, 2004–2005 through 2008–2009. *Suicide and Life-Threatening Behavior*, 41(4), 353–371.
- SPSS Inc. (2014). *SPSS for windows, version 22.0*. Chicago: Author.
- Stanley, N., Mallon, S., Bell, J., & Manthorpe, J. (2009). Trapped in transition: Findings from a UK study of student suicide. *British Journal of Guidance & Counselling*, 37(4), 419–433.
- Tompkins, T. L., & Witt, J. (2009). The short-term effectiveness of a suicide prevention gatekeeper training program in a college setting with residence life advisers. *The Journal of Primary Prevention*, 30(2), 131–149.
- Tompkins, T. L., Witt, J., & Abraibesh, N. (2010). Does a gatekeeper suicide prevention program work in a school setting? Evaluating training outcome and moderators of effectiveness. *Suicide and Life-Threatening Behavior*, 40(5), 506–515.
- Wallack, C., Servaty-Seib, H. L., & Taub, D. J. (2013). Gatekeeper training in campus suicide prevention. *New Directions for Student Services*, 2013(141), 27–41.

Copyright of British Journal of Guidance & Counselling is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.