Research is a core part of our identity – it lies at the heart of everything we do, and it always will.

Peer-reviewed research into the effectiveness of Storm Skills Training has spanned two decades, but learning about the effectiveness of our training methodology is a continual process.

We are confident about our training package because research shows that it makes a significant difference: improving the skills, attitudes, and confidence of frontline team members in lots of different settings, from schools and prisons to frontline mental health teams.

In this document, you'll find a summary of the research. We will keep this document up to date as we gather more evidence and research into the effectiveness of our training package.

Introduction

Studies from 2000 onwards expanded in scope, both in terms of intended training audiences and research aims. Training was delivered to a wider variety of audiences (for a full list, see below), and research aims expanded to evaluate changes to:

- Knowledge about suicide and suicide risk
- Skills in the assessment of self-harm
- Skills in the clinical management of self-harm
- Negative attitudes towards suicide, suicide prevention, and those who attempt or die by suicide
- Impact of training on longer-term clinical practice

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Training participants' levels of attendance and satisfaction with the training were also increasingly assessed in later studies.

Some research has also explored our "train-the-facilitator" (TTF) model. The aim of this type of research was to determine the essential components of a successful TTF approach, with a view to improving the delivery and implementation of Storm Skills Training across organisations.

What is the Storm Skills Training model?

Since its development in the late 1990's, the Storm Skills Training model has consistently incorporated the following components:

- Didactic lecturing on background knowledge about suicide (and later self-harm)
- Discussion with colleagues and peers
- Modelling risk assessment and clinical management skills through video demonstration
- Skills practice based on paired role play (some of which are filmed)
- Video feedback on filmed role play including group review, self-reflection and feedback.

The specific combination of didactic lecturing, discussions, observation, and practice is recommended for training organisations in the Self-Harm and Suicide Competence Framework (2018).

Role play and patient simulation are common forms of skills practice in healthcare education and training, particularly when teaching complex clinical communication skills. Digital tools are often used to supplement these approaches in a variety of ways, such as through virtual simulations or filmed role play.

Filmed role play, including video feedback, are the foundation of Storm Skills Training. There are several key reasons for this:

- Watching filmed roleplay encourages participants to carefully reflect on the skills used
- Video data more accurately captures observable changes to participants' skills compared to retrospective self-reports
- Video feedback is delivered in a supportive group setting, so that participants can benefit from peer-to-peer learning and discussion

In research contexts, filmed role plays also enable a more objective assessment of training effectiveness.

Most of the research studies into Storm Skills Training have incorporated filmed skills practice as part of training and assessment. There are a few studies where this has not been possible due to lack of time, limited resources, and/or the reluctance of trainees to participate.

Is Storm Skills Training effective?

The effectiveness of skills training can be assessed using a variety of different methods. Qualitative research may involve interviewing training participants, specifically about the effects of training on their day-to-day practice. In quantitative studies, researchers typically compare practitioners' pre-and post-training scores in some or all of the following areas:

1. Confidence
2. Skills acquisition
3. Attitudes
4. Knowledge
5. Impact on practice

The above components can be operationalised in a variety of ways, including questionnaires/surveys, interviews, and observation.

The following takes you through the ways in which elements 1-4 have been measured in Storm Skills Training literature, as well as the what the research says about the effectiveness of our training package.

1 Confidence

Training participants' confidence levels in the assessment and management of suicide risk have typically been measured before training, and then again immediately afterwards.

Participants' levels of confidence has mostly been measured quantitatively in self-report questionnaires, typically using visual analogue or Likert scales. Multiple studies indicate that Storm Skills Training improves practitioners' confidence in supporting people at risk of self-harm or suicide. This effect has been replicated across multiple settings and roles, including (but not limited to):

- GPs
- Accident & emergency
- Psychiatrists
- Mental health workers
- Nurses
- Social workers
- Occupational therapists
- Health visitors
- Teachers
- Support workers
- Psychologists
- Prison staff
- Voluntary workers

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Post-training increases in practitioners' confidence levels are the most consistently replicated measure of training effectiveness in the existing Storm Skills Training literature.

2 Skills acquisition

Skills development has been evaluated using a controlled "before and after" approach. Some studies have examined skills development before and immediately after training, while others have also examined the retention of skills over longer periods of time (such as four months post-training). Changes to participants' skills have been measured through:

- blind assessment of their filmed role play interviews, and
- self-rated questionnaires.

Several studies have shown that practitioners' overall risk assessment and clinical management skills improved after Storm Skills Training. Some of the specific "microskills" that improved after training were:

- Asking questions about suicidal intent, including the degree and intensity of suicidal thoughts and degree of planning
- Providing short-term/immediate support
- Exploring coping strategies
- Problem solving

One study has suggested that non-mental health staff show a more significant improvement in skills compared to mental health professionals. This may be because mental health staff are more skilled in the assessment of self-harm and suicide prior to training than other frontline workers.

In studies that included post-training surveys or interviews, practitioners have described how they changed elements of their clinical practice as a result of Storm Skills Training. For example:

- The majority of respondents reported using suicide assessment (89%) and safety planning skills (81.3%)
- The majority of respondents reported using self-harm assessment (76.2%) and safety planning skills (72.4%)

3 Attitudes

Negative attitudes towards suicide, suicide prevention, and those who attempt or die by suicide have been measured via the Attitudes to Suicide Prevention Scale (ASPS) (where lower scores indicate more positive attitudes).

Respondents indicated their level of agreement with 14 statements on a five-point Likert scale, both before and after Storm Skills Training.

Several studies have shown that Storm Skills Training is also effective in reducing negative attitudes towards suicide, people who attempt suicide, and suicide prevention. In some cases, the reduction in negative attitudes was most significant in specific subgroups of participants who had the most negative attitudes prior to being trained, such as A&E staff.

4 Knowledge

Participants' knowledge of suicide and suicide risk (and, in later versions, of self-harm) was assessed in Storm literature from 2008. Initially, questionnaires were developed based on Storm's training manuals. In later studies, researchers adapted a pre-existing and validated tool (the Knowledge of Deliberate Self-Harm Questionnaire) to assess participants' pre and post-training knowledge.

Participants completed this at multiple time points, including before training, immediately afterwards, and several months post-training. The results indicated that not only does knowledge improve immediately after training, this improvement is maintained for up to eight months post-training.

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5 Impact on practice

The impact of Storm Skills Training on participants' longer-term practice has been explored in a small number of studies using self-report questionnaires or qualitative interviews with participants and facilitators.

Results indicated that both groups felt the training had a positive impact on clinical practice, including:

- Increased confidence and ability to ask directly about suicide
- Increased confidence and ability to discuss self-harm and suicide
- Ability to distinguish between thinking about and planning suicide

Are participants satisfied with Storm Skills Training?

Satisfaction scores for Storm Skills Training are generally very high. Across multiple studies in various settings – including prisons, healthcare, Australian secondary schools, and British universities – the majority of participants have indicated that they found the training content **useful** and **relevant** to their everyday practice.

In what contexts has Storm Skills Training been applied?

Healthcare and voluntary sector

The most common context to which Storm Skills Training has been applied is in the healthcare and voluntary sector. As noted above, this has included staff members from primary care, A&E, mental health services, social services, occupational therapy, psychiatry, and nursing. Most of this research has suggested that Storm Skills Training significantly increases the confidence and skills of healthcare staff in dealing with patients at risk of suicide, as well as improving attitudes and knowledge about suicide prevention.

One study found that non-mental health staff showed a significant improvement in skills post-training, while mental health professionals did not. In addition, a reduction in negative attitudes post-training was only significant for A&E staff. These results suggest that training outcomes may vary depending upon factors such as the professional context, staff roles, and existing attitudes towards people who self-harm and suicide. Additional research to understand these nuances is needed.

Prison service

A 2008 pilot study investigated the impact of Storm Skills Training for staff in three English and Welsh prisons. While the structure of the course remained the same, extra information was added about suicide in the prison context and avenues of support for prisoners with mental health issues. In addition, the demonstration video was re-recorded with actors playing suicidal prisoners. 15 staff members were initially trained as facilitators, who then went on to train 183 more staff members across three establishments.

Attitudes, knowledge, and confidence were assessed immediately pre-training, immediately post-training, and at six-eight months follow-up. Training was found to significantly improve attitudes, knowledge, and confidence, and the majority of staff reported enjoying the course. A drop in scores at follow-up suggest that refresher training is important to maintain this improvement. Skills acquisition was more difficult to assess in this particular study as video role play was rarely used in the pilot, reportedly due to a lack of resources to facilitate this.

Secondary education (Australia)

One study has tested the impact of Storm Skills Training on staff members from 29 secondary schools in Victoria, Australia. The training package, delivered over a two-day period, was adapted to focus on suicide and self-harm in young people. Confidence, perceived skills, knowledge, and attitudes were assessed immediately pre-training, immediately post-training, and eight weeks later. Skills acquisition was tested immediately pre- and post-training via filmed role plays.

Results indicated that practitioners' confidence, perceived ability, and knowledge all improved. Role play assessment, using pre- and post-training films, showed that participants' overall suicide risk assessment scores improved significantly.

Higher education (UK)

Another pilot study was conducted to assess the impact of Storm Skills Training on 20 members of staff at a British university. As with the other pilot studies, the package was adapted for the setting: it covered two modules rather than four and was more generic in focus (rather than specific to healthcare settings). Skills, attitudes, and confidence were measured immediately pre-training and then repeated immediately post-training along with a satisfaction questionnaire. three months later at follow-up, attitudes and confidence were assessed again.

Participants showed significant improvements on three skills immediately post-training: "asking about alcohol", "exploring suicidal thoughts", and "exploring specific plans". There was also an overall reduction in negative attitudes, and on two out of 14 items, these changes were statistically significant. Confidence increased significantly immediately post-training and this change was maintained at follow-up. The majority of training participants (80%) found the role play exercises useful.

How well is Storm Skills Training implemented and embedded in organisations?

A small number of studies have explored this topic, either as stand-alone qualitative research or as supplementary qualitative studies nested within larger quantitative projects. In all cases, the method of data collection was interviews, both unstructured and semi-structured.

Despite using slightly different methods of analysis in all papers, the conclusions have been relatively consistent:

- Attitudes towards Storm Skills Training among healthcare staff participants are generally positive, particularly with respect to its structure and advice on what to ask, how to ask about it, and what to do with that information.
- Facilitators have expressed that training generally tends to be better received among younger, more junior, and/or less experienced members of staff. In particular, more senior members of staff sometimes resist training.

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Key factors which contribute to the successful implementation of Storm Skills Training have been identified as:

- **Context:** leadership and administrative support provided by the host organization at all levels (consultants, senior managers, clinical managers, and facilitators); the broader policy context with respect to suicide and self-harm; the motivation and competence of individual workers; peer support and training meetings

- **Intervention:** openness to adapting training to suit the local context; improving and developing training based on evidence and feedback; ensuring the training is both useful and relevant to participants' practice; targeting training at the right people

…and the relationship between context and intervention.

In the most recent paper on this topic, the importance of facilitators, managers, and participants constructing a "coherent vision" of Storm Skills Training cascade package was also highlighted. Namely, staff need to reach an agreed understanding of how Storm Skills Training differs from normal practice, the reasons why it is needed, and its value to the organisation.

Summary and conclusion

The effectiveness of Storm Skills Training has been explored in peer-reviewed research for over 20 years, across a range of settings and using a variety of methodologies. There is good evidence that our training packages in suicide and self-harm prevention improve skills, confidence, attitudes, and knowledge in frontline workers. This includes professionals from physical and mental healthcare, secondary and higher education, the voluntary sector, and the prison service.

Strengths and limitations

A key strength of the literature on Storm Skills Training is that it is – like the training package itself – focused not just on participants' knowledge and satisfaction, but on their attitudes, levels of confidence, and skills development. In addition, the collection and blind rating of filmed roleplay interviews is another specific strength of Storm Skills Training - related research studies.

This method allows for a more objective assessment of post-training changes in observable skills. This means that research outcomes are not based solely on self-report data.

A limitation of the existing literature base relates to sample size. Small samples were common, due in large part to practical difficulties relating to the recruitment and retention of participants. In some studies, this meant that it was not possible to compare differences in skills development across multiple professional groups.

A further limitation relates to the format of the training packages in research studies. Although the structure of the training (didactic lectures, discussion, observation, and filmed skills practice) remained the same, some factors varied across studies, including:

- The length of training sessions
- The frequency of training sessions
- The number of training participants

This level of flexibility in delivery was designed to address the needs of different organizational contexts, and to ensure minimal interference with participants' professional responsibilities. However, the level of variation in delivery format may have had an impact on research results.

Implications for future research

Future studies that explore the effectiveness of Storm Skills Training will need to address the above issues relating to participant recruitment, sample size, and variation in delivery format. There are also several other promising avenues for future research.

At the time of writing, we are building a thorough evaluation and research plan. Questions include:

- Do differences in delivery format impact upon training effectiveness?
- Are there differences in skills development across different professional groups?
- What is the longer-term impact of Storm Skills Training on organisational practice?
- Does Storm Skills Training impact upon service user experiences?

As such, the research and evaluation of Storm Skills Training continues. When it comes to self-harm and suicide prevention skills training, we are committed to

staying relevant, ensuring our training content aligns with most up-to-date research, and ensuring our training has an impact on the frontline – more effective conversations and fewer lives lost to suicide and self-harm.

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