CHAPTER 4
AN E-LEARNING SUPPORTED TRAIN-THE-TRAINER PROGRAM TO IMPLEMENT A SUICIDE PRACTICE GUIDELINE

Abstract

An e-learning supported Train-the-Trainer program was developed to implement the Dutch suicide practice guideline in mental health care. Publications on implementation strategies have been restricted to the final reporting of studies with little opportunity to describe relevant contextual, developmental and supporting work that would allow for a better interpretation of results and enhance the likelihood of successful replication of interventions. Therefore, in this paper we describe the theoretical and empirical background and the material of the intervention. We monitored the number of professionals that were trained during and after the trial, and we randomly assessed adherence to the trainings protocol.

Each element of the intervention (train-the-trainer element, one day face-to-face training, e-learning) is described in detail. During the trial 518 professionals were trained by 37 trainers. After the trial over 5000 professionals and 180 gatekeepers were trained. The e-learning module for trainees is currently being implemented among 30 mental health institutions from the Netherlands. Research assistants visited 5 face-to-face training sessions in which trained mental health professionals trained their own team. They found that adherence to the training protocol was good and that the program was well received by trainees. They also reported that ICT problems in mental health institution resulted in less uptake of the e-learning modules.

These results suggest that an e-learning supported Train-the-Trainer program is an efficient way to uptake new guidelines by professionals. The face-to-face training was well structured so that it was easy to adhere to the training protocol. Two e-learning modules made the spread of the training material more viable, although the spread was limited by the problems with ICT facilities. Overall the intervention was well received by both trainers and trainees. By thoroughly describing the material and spread of the training and by offering all material online we hope to stimulate the further dissemination of our intervention.

Keywords

suicide prevention; implementation; e-learning; train-the-trainer, guideline
Introduction

Background

A consistent finding in research of health services is the slow uptake of new evidence into clinical practice. To address this problem, clinical practice guidelines in which evidence is transformed into recommendations are developed. However, difficulties arise in altering daily practice by the provision of guidelines, since adherence to guidelines is not self-evident. In 2012, a new Dutch multidisciplinary ‘Practice Guideline on the assessment and treatment of Suicidal Behavior’ (PGSB) has been issued. It is assumed that adherence to this guideline by (mental) health care professionals may result in a reduction of fatal and non-fatal suicidal behavior. Aiming at reducing the suicide rate in The Netherlands, Dutch (mental) health care institutions now face the challenge of applying the guideline in daily practice.

It is suggested that the extent of guideline adherence depends on the effectiveness of dissemination and implementation strategies. Previously, we examined the effectiveness of an e-learning supported Train-de-Trainer program (TtT-e) aiming at improved guideline application by mental health care professionals and evaluated its cost-effectiveness. The effects have been compared with traditional guideline dissemination (easy access to guidelines via internet, reviews in clinical journals and conferences) at the level of mental health care professionals and patient level in a cluster randomized trial, including 45 departments (n=45) from 9 mental health care institutions (MHI) throughout The Netherlands (Dutch Trial Register NTR 3092).

Departments were randomly allocated to either the intervention condition (TtT-e) or the control condition in which the guideline has been disseminated traditionally (IAU; implementation as usual). It was hypothesized that guideline implementation via TtT-e results in better guideline adherence of professionals than IAU and that patients more quickly recover from suicidal thoughts if they were treated in trained departments. It has been shown in this study that, indeed, TtT-e results in stronger guideline adherence of professionals, in addition to increased self-evaluation of knowledge of suicidal behavior, and a more adequate response to suicidal behaviors of professionals as compared with traditional dissemination strategy. In addition, depressed suicidal patients treated in trained departments show a quicker recovery of suicidal ideation. We concluded that TtT-e is an effective strategy to disseminate the guideline since TtT-e more likely results in state-of-the-art dealing with suicidal behavior than IAU. Publications on implementation strategies have been restricted to the final reporting of studies with little opportunity to describe relevant contextual, developmental and supporting work that would allow for a better interpretation of results and enhance the likelihood of successful replication of interventions. Therefore, in this paper we describe the theoretical and empirical background and the development process of the TtT-e program. We also provide information on specific aims, outline, practical starting points and the supporting training materials. We monitored the number of trainees trained with our intervention during and after the trial. Finally, we will report the findings of research assistants who randomly and unannounced visited five face-to-face trainings provided by trained trainers who trained their colleague’s.

Theoretical and empirical background of the TtT-e program

The TtT-e program is based on the recommendations of the PGSB. The development of the PGSB has been commissioned by the Dutch Ministry of Health, Welfare & Sports (VWS) and was carried out by representatives of the Netherlands Psychiatric Association (NVVP), the Dutch Association of Psychologists (NIP) and the Dutch Nurses’ Association (V&VN). Representatives of the Dutch College of General Practitioners (NHG) were also involved, as were representatives of patient participation organizations and organizations for relatives bereaved by suicide. International suicide guidelines, such as the suicide guideline of the American Psychiatric Association and the Royal College of Psychiatrists in addition to extensive reviews of the Scottish Government served as starting points for literature searches. Conclusions were formulated in a four-fold classification of the level of evidence ranging from level 1 (strong evidence, highly recommended or dissuaded) to level 4 (reflecting experts opinions). If applicable, conclusions are followed by a paragraph with additional considerations weighting the evidence. Finally, recommendations were worded in terms of professional behavior. They vary across a continuum with respect to the strength of the evidence. By readers, the strength is recognizable as for each level, a standardized wording is applied.

The theoretical framework for the understanding of the onset of suicidal behavior

In the guideline, an integrated model of stress-diathesis and entrapment is used to understand the onset and maintenance of suicidal conditions. The integrated model depicts suicidal behavior as the outcome of a process influenced by the interaction of biological, psychological, environmental and situational factors; the interaction of which may lead to entrapment. Entrapment is proposed to be the specific condition in which suicidal behavior arises. The guideline recommends systematic investigation of the suicidal condition with the Chronological Assessment of Suicidal Events.
Goals
exploring motives for the
assessing previous suicidal
participation of patient’s VIPs* in the
maintaining the working relationship
exploring the patient’s view
taking care of safety
fostering a therapeutic alliance with the
experiencing the exploration of suicidal
receiving feedback of a suicidal charac
taking care of safety
fostering a working relationship with a
theoretical framework for suicidal
continuous education of (para)medical professionals have made e-learning
Advances in technology, the rise of costs in health care and the need for
Empirical considerations of professional and gatekeeper training to enhance expertise in suicide risk management
Promising interventions likely to be effective in reducing suicidal behaviors are mental health practitioner and gatekeeper education 16, 17 aiming at early recognition and treatment of suicidal behavior and/or underlying psychiatric morbidity 18. This type of training has shown to improve knowledge, skills, and attitudes towards suicidal behavior 21 of school staff 22, students 23, 24, members of an Aboriginal community 25, youth workers 26, US Veterans Affairs workers 27, construction workers 28 and mental health care workers 29, 30. Additionally, professional and gatekeeper training in diagnosis and treatment of depressive disorders has been shown to result in a reduction of suicide rates when delivered to general practitioners 27, 31-34 and US Air Force personnel 29, and in a reduction of self-destructive acts in American Aboriginal adolescents 35.

Empirical considerations of a Train-the-Trainer approach
The Train-the-Trainer model of small interactive educational training is based on Adult Learning Theory 37, which states that people who train others remember 90% of what they teach others, and on Diffusion of Innovation Theory 38, stating that people adopt new information better through their trusted social networks. Training of mental health care professionals using a Train-the-Trainer model of small interactive training, limits the need to employ costly external expertise. Knowledge and skills are passed on and facilitated by peers instead of external experts. The effectiveness has been hypothesized since benefits of training by peer-assisted learning in medical health education are comparable to those achieved by professional teachers 39-41. In addition, peer-assisted learning has been shown to enable peer teachers to improve their theoretical knowledge along with their practical skills 40. Subsequent to the study period, trainers are supposed to continue their role as an expert in suicide prevention skills, as ongoing support and feedback when implementing psychiatric guidelines seems to be effective 41.

Empirical considerations of e-learning support
Advances in technology, the rise of costs in health care and the need for continuous education of (para)medical professionals have made e-learning
a popular new educational method 45-47. In a review of effective implementation strategies, a combination of interactive postgraduate training including personalized feedback, and additional material such as a website was found to be more successful than a single-faceted approach 6, 48, 49. E-learning is expected to complement face-to-face training in a medical setting; it was found to help medical students become more actively involved in the study material and thereby help to internalize the material 50.

Table 1: Themes and topics of the e-learning supported Train-the-Trainer program

<table>
<thead>
<tr>
<th>Themes</th>
<th>Topics</th>
<th>Goals</th>
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<tbody>
<tr>
<td>1. Basic assumptions in dealing with suicidal behaviors</td>
<td>• fostering a therapeutic alliance with the suicidal patient, systematic assessment of suicidal behavior</td>
<td>Exploring and discussing the current suicidal condition (course, intensity and repetition of suicidal thoughts, intent, urgency, preparations, plans, acts, proposed consequences, extent of hopelessness)</td>
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<tr>
<td>2. Systematic assessment of suicidal behaviors</td>
<td>• the theoretical framework for suicidal behavior: the integrated model of stress diathesis¹ and entrapment ²</td>
<td></td>
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<tr>
<td>3. CASE-interview ³ for systematic assessment of current and previous suicidal episode(s)</td>
<td>• maintaining the working relationship with a suicidal patient and (if applicable) patients’ VIPs* • experiencing the exploration of suicidal thoughts as a suicidal character</td>
<td></td>
</tr>
<tr>
<td>4. Exploring and discussing the future</td>
<td>• exploring motives for the current episode (events, conditions, role of others, actions) • assessing previous suicidal episodes (course, intensity, intent, plans, preparations, consequences, urgency, extent of hopelessness, effective interventions, the role of VIPs*) • exploring the patient’s view towards the future</td>
<td></td>
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</tbody>
</table>
### Diagnosis of the current suicidal condition
- the etiology and pathogenesis of the current suicidal condition
- participation of patient’s VIPs* in the assessment of the patient’s suicidal behavior

**PRACTICING 3 THROUGH ROLE PLAY**
- maintaining the working relationship with a suicidal patient and (if applicable) patients’ VIPs*
- exercising on the application of the theoretical framework for suicidal behavior as a resource for the assessment of suicidal behavior
- experiencing the discussion on hypotheses with the patient
- assessment of (current and previous) suicidal behavior
- weighting risk and protection factors discussing the hypotheses with the patient and (if applicable) with VIPs*
- formulating hypotheses on the etiology and pathogenesis of the current suicidal episode
- using the therapeutic alliance with the patient to discuss hypotheses on the etiology and pathogenesis of the current suicidal condition

### Safety and continuity of care
- setting safety priorities in suicidal crises
- benefits and contents of a safety plan
- possible roles and responsibilities of involved professionals and VIPs*
- benefits and means of providing continuity of care

### Treatment of suicidal behavior
- possible interventions to enhance patient’s safety
- strategies of moderating the suicidal condition
- strategies of moderating the impact of risk factors for suicidal behavior
- strategies of strengthening protection factors for suicidal behavior
- possible roles of VIPs* and other professionals in reducing the short and long term suicide risk

**PRACTICING 4 THROUGH ROLE PLAY**
- using the therapeutic alliance with the patient to discuss treatment strategies as a suicidal patient
- establishing treatment strategies to moderate the current suicidal condition and/or the impact of risk factors and to strengthen protection factors
- establishing roles and responsibilities of (if applicable) VIPs* and professionals
- adapting a safety plan
- discussing treatment strategies with the suicidal patient and (if applicable) VIPs*

### Chronic suicidal conditions
- suicidal behavior in patients with borderline personality disorder (BPS)
- pitfalls in the management of suicidal behavior in patients with BPS
- dealing with suicidal behavior in patients with BPS
- professional consultation, intervision/supervision

*VIPs= very important persons i.e. relatives and/or friends of the suicidal patient

### The TtT-e program

**Development process and training content**

Guideline recommendations served as the starting point to set the competences in terms of professional behavior. First, all guideline recommendations were listed and clustered into six themes (Table 1). Second, themes are scheduled following the sequence of action in common clinical practice. For each theme, aims were set. Four role-playing exercises in which dyads of professionals practiced knowledge and skills formed the core of the training. During each role play, one professional practiced the structural assessment and treatment of suicidal behavior. The other professionals had to act as a suicidal patient from his/her own daily practice. Third, in two subsequent meetings with experts due to scientific achievements and/or clinical experience on the topic, the training was tried out. Subsequently, the content and scheduling was discussed. Based on feedback, adjustments were made. The competences to be achieved by the training are outlined in Table 2.
After the training:
The professional deals with suicidal behaviors of patients in the context of the guideline’s basic assumptions, to achieve structured diagnosis of the suicidal behavior and to establish an appropriate treatment strategy. Basic assumptions are:

- Contact with suicidal thoughts of the patient is the basis of a therapeutic alliance with the suicidal patient and VIPS;
- Patient’s suicidal behavior is a separate focus of diagnosis & treatment;
- The patient’s suicidal behavior is systematically assessed by using the integrated model of stress-vulnerability diathesis² and entrapment² to explain the onset of suicidal conditions and the CASE-interview³ for the assessment of suicidal conditions;
- A focus on safety & continuity of care is a relevant part of the treatment strategy;
- The professional exerts on engagement of the patient’s relatives in diagnosis & treatment.

2. The professional is able to foster a therapeutic alliance with a suicidal patient (and if applicable VIPS).

This goes to show that the professional:
- discusses suicidal feelings, thoughts, plans and (former or planned) suicidal acts without any reluctance;
- shows interest and understanding to the patient (and if applicable VIPS).

3. The professional systematically explores risk and protection factors for suicide.

This goes to show that the professional:
- uses the CASE-interview³ for the assessment;
- focuses on stress and vulnerability factors that increases or decreases the suicide risk and explores to what extent the patient experiences his/her situation as being trapped.

4. The professional uses knowledge of risk and protection factors to foster and maintain a working relationship with the patient (and if applicable VIPS).

This goes to show that the professional is (increasingly) prepared to share feelings, thoughts and relevant information with the professional.

5. The professional formulates hypotheses on the etiology and pathogenesis of the patient’s suicidal behavior.

This goes to show that the professional:
- discusses the hypotheses with the patient (and if applicable VIPS);
- adjusts hypotheses on the base of the patient’s feedback (or feedback from his/her relatives);
- exerts on the patient’s agreement (and if applicable on VIPS).

6. The professional establishes short and long term strategies for the treatment of the suicidal behavior.

This goes to show that the professional’s proposed strategies are focused on resources and factors protecting the patient from (attempted) suicide.

7. The professional establishes safety and continuity of care for the suicidal patient, possibly and preferably in corporation with VIPS.

This goes to show that the professional:
- makes a safety plan;
- sets and executes follow-up assessments of the suicidal ideation to observe the course of the suicidal behavior;
- adjusts treatment strategy if needed;
- exerts on the patient’s agreement at all times (and if applicable on VIPS).

VIPs = trusted relatives and friends of the patient

Table 2: competences after the training

<table>
<thead>
<tr>
<th>Competence</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>The professional is able to foster a therapeutic alliance with a suicidal patient (and if applicable VIPS).</td>
</tr>
<tr>
<td>2.</td>
<td>This goes to show that the professional: discusses suicidal feelings, thoughts, plans and (former or planned) suicidal acts without any reluctance; shows interest and understanding to the patient (and if applicable VIPS).</td>
</tr>
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<td>3.</td>
<td>The professional systematically explores risk and protection factors for suicide.</td>
</tr>
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<td>4.</td>
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<td>5.</td>
<td>The professional formulates hypotheses on the etiology and pathogenesis of the patient’s suicidal behavior.</td>
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<td>7.</td>
<td>The professional establishes safety and continuity of care for the suicidal patient, possibly and preferably in corporation with VIPS.</td>
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Practical starting points

In the application of the Train-the-Trainer model, there were three levels of acting: masters, trainers and trainees. Masters are experts in the field of suicide prevention due to scientific performance and/or clinical practice on the topic. Trainers were mental health care workers of various disciplines (psychiatrists, psychologists and registered mental health nurses), selected from the clinical staff of departments. Trainers ideally had good training skills, were prepared to train their co-workers and have been indicated to be competent to serve as a role model at institutional level and to provide future additional training. Trainees were members of multidisciplinary teams (e.g. psychiatrists, psychologists, nurses) engaged in the assessment, treatment and counselling of suicidal patients. Training was applied at two levels: first, trainers were trained by masters. Subsequently trainees were trained by trainers. The content of the training was similar at both levels. As mental health care is essentially multidisciplinary, trainings were provided to multidisciplinary teams with a minimum of 12 and a maximum of 16 participants per training session. During the role plays, professionals experienced how it was to more systematically address suicidality. Importantly, when they had to act as a suicidal patient from their own daily practice during the role plays, they experienced the effect that such a systematic assessment could have on a patient.

Training materials

Before each training, trainees were enhanced to download and read the guideline summary of the PGSB. The summary includes a brief description of the theoretical and practical starting points of suicidal behavior management, schemes summarizing recommendations on diagnosis and treatment of suicidal behavior, treatment setting, professional acting following completed suicide, recommendations on legal issues, and privacy matters following completed suicide. It also includes specific recommendations for general practitioners and Aid & Emergency departments’ staff. A training manual was provided to help trainers organize the training. The manual provides a detailed description of competences (see Table 2) and aims per theme, a detailed minute-to-minute training time schedule, and appendices (e.g. the CASE-approach, the integrated stress-diathesis and entrapment model, practicing resources and forms to evaluate role playing sessions).

We designed a PowerPoint® Presentation to guide trainers and trainees throughout the training sessions. Digital versions of all training materials had been available by downloads from the research website www.pitstopsuicide.nl.
The TtT-e program is supported by two e-learning modules. Module 1 consists of video scenarios in which well-experienced nurses, psychologists and psychiatrists interact with suicidal characters (played by actors) according to the guideline recommendations. Suicidal characters of various age, gender and diagnostic category show prototypical suicidal symptoms, cognitions and interaction problems. In between the scenarios, guideline topics and recommendations are explained by masters. The total running time of Module 1 is 60 minutes. A demo can be found via www.pitstopsuicide.nl. Module 2 is developed for trainers and provided a video tape of the first master training session allowing trainers to review the exercises. Trainers and trainees had 24/7 personalized access to the modules that repeatedly could be viewed. To assess adherence to the training protocol, research assistants randomly visited 5 trainings in which trainers trained trainees.

Results

Trainings during the trial

Figure 1: Flow of dissemination of the TdT-e intervention within and after the study

Four masters trained 37 trainer in two single sessions in October 2011 and January 2012 (Figure 1). Masters were individuals with expertise in the field of suicide by demonstrable clinical and/or scientific activities. Trained trainers were psychiatric nurses/advanced nurse practitioners (n = 17), psychologists (n = 11) and psychiatrists (n = 9) recruited from nine institutions. These trainers then trained their peers in 37 training sessions. A total of 518 professionals were trained in the study.

Adherence during the trial

Research assistants reported that all trainers adhered to the training protocol. Role play four, which focuses on the treatment of suicidal behavior sometimes resulted in some confusion as nurses usually are supportive but not responsible for determining treatment policy. Some trainees noted that the training was too long, and some reported that they were hindered by insufficient ICT facilities in their department so that were unable to view the e-learning modules. Trainees appreciated being trained by a peer. Also the small group interactive training element was highly valued as this provided the change for constructive feedback. The trainers found the e-learning module displaying a complete master training very good reference material.

Dissemination after the trial

Even before any results on the effectiveness of TtT-e were communicated, the intervention was spread widely as soon as the trial was finished in October 2013. As soon as the trial ended, our trainers started to further train colleagues and also trained peers. Apparently the training material was user-friendly and enabled newly trained trainers to subsequently train others as trainer. The additional e-learning module, developed to support trainers to provide the training, has been viewed 278 times from the start of the study up until 2014 and turned out to be well received. As far as we can ascertain, from October 2011 until December 2014 our trainers trained 151 new trainers, who trained 5,000 persons in the application of the guideline. In addition, approximately 180 gatekeepers (police officers, general practitioners, etc) were trained, alongside nurses from the Aid & Emergency department and the intensive care unit of a general hospital.

GGZ-ecademy

The e-learning module for trainees is currently being implemented among 30 mental health institutions from the Netherlands via the GGZ-ecademy (ggzecademy.nl). The GGZ-ecademy is a collaboration of MHI’s in the Netherlands on the field of e-learning. The GGZ-ecademy incorporated the content and structure of our module and applied their format and educational experience to improve the module. The adapted version is currently available to over 30,000 mental health professionals throughout the Netherlands.
Discussion

This paper provides the rationale and outline of a structured e-learning supported train-the-trainer intervention to implement a suicide practice guideline. Results on adherence show that after a one-day training by masters, trainers were ready to train their colleagues and even to train other trainers. This demonstrates that the face-to-face training was well structured, and the training material (training manual and e-learning) provides sufficient material to replicate and disseminate the training. The e-learning modules for both the trainers and the trainees were well received, but there were problems with ICT-facilities that possibly may have limited the distribution of the online material.

Just after the trial ended, the module was spread among 5000 professionals. Apparently, the program addresses a need for training in suicide prevention skills of mental health care professionals. The e-learning module is currently being spread among 30,000 professionals. A common argument for the use of e-learning is its cost-effectiveness. Medical education is expensive, and via e-learning, costs can be reduced. As costs of mental health care keep on rising, and budgets keep on slinking, health managers and policy makers are keen to only offer e-learning. However, there is a lack of methodological sound studies examining the cost effectiveness of e-learning by (mental) health professionals. Therefore, the implementation of e-learning modules should be combined with a thorough validation of its (cost)effectiveness. Also, as we found that trainees highly appreciate the small group face-to-face training and the role plays, we argue that e-learning can be best offered in addition to a face-to-face training, rather than as a substitute. Future studies should investigate whether certain parts of the face-to-face training can be replaced by e-learning; this would allow to shorten the face-to-face training. By clearly describing the rationale and outline of the training, and by offering the full training material online, we aim to facilitate the distribution of the current intervention, and to stimulate subsequent research on guideline implementation in mental health care.

Competing interests

All authors declare to have no competing interests

Authors’ contributions

AK, MdG, and JdK obtained funding for this study. MdG, JdK and AK designed the intervention. MdG and DdP drafted the manuscript. AK, and JdK contributed to the execution of the study, and to the manuscript writing.

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