



An Evaluation of Active Mental Health, Wellbeing and Suicide Intervention Using the TUFMINDS Program

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Abstract

Background: Suicide rates are not falling despite increasing expenditure and effort. Historically individuals in mental health crises have delays in accessing treatment so a universal, community based, online program that provides active mental health and suicide intervention has potential for significant benefit.

Aims: To evaluate the efficacy, acceptability and safety of the TUFMINDS program to deliver video-based education. This includes active processes to improve mental wellbeing, resilience and coping and mood scores as well as suicide knowledge and self-efficacy for active intervention, provided in a passive manner with participants watching videos modules.

Method: 66 participants in two businesses attended 6 hours of training watching the TUFMINDS video program with pre and post questionnaires evaluating the changes.

Results: Participants showed significant improvement in optimism, resilience, depression, anxiety and stress scores as well as reduction in mental health stigma. The improvements in suicide knowledge, skills, confidence and willingness to assist others were also dramatically increased. There was no evidence of any iatrogenic effects from the training.

Limitations: The lack of a control group, small sample size, lack of follow up, use of non-validated methods are the limitations of this study.

Conclusions: Direct video training can be effective to increase mental resilience and wellbeing, reduce depression, anxiety and stress while improving suicide knowledge and willingness to assist others in the suicidal crises. This study supports the proposal that mental health interventions can be provided in video or digital formats without professional input across communities safely and effectively.

Introduction

Suicide is the leading cause of death in 15 – 44 year old Australians and 25% of deaths in the 15-24 year olds (Australian Bureau of Statistics, 2016) [1]. The presence of suicidal thoughts and suicide attempts are also very high in young people with 7.5% reporting the thinking in the past 12 months and 2.4% have made an attempt [2]. Despite the significant efforts and national expenditure to reduce these rates, no significant improvement has been seen to reduce suicide rates and there is limited evidence of effectiveness of suicide prevention interventions [3, 4].

Suicide prevention activities have been classified by Silverman and Maris (1995) [5] as universal (whole populations), selective (targeting vulnerable subgroups) or indicated (targeting those showing signs of risk). There are programs that focus on awareness about suicide, like safe

TALK Program [6], while others focused on warning signs and help seeking strategies and gatekeeper training.

It was found that universal education was more effective than gatekeeper training in reducing suicide attempts and severe suicidal ideation [7].

Concerns have been raised that suicide prevention programs may create iatrogenic effects of increasing suicide risk in participants especially vulnerable younger people [8, 9]. However, several studies have shown this not to be the case [6, 10, 11] and these studies reflect the importance of monitoring any program to track this risk.

The apparent deficiency across all of these suicide programs appears to be the absence of active mental illness interventions for the individuals at risk. The programs tend to focus on awareness, support and referral and this follows the historical approach of non-medical organizations avoiding direct mental health interventions in the community programs and they have left these to the professionals when direct face to face consultations occur. The delay in accessing this professional help and not being available after hours is well reported [12]. This lack of active mental health intervention in the community may be one of the reasons that these national programs and high-level national spending has not improved the suicide rates over the decades.

Another important aspect of addressing suicide risk is to have strategies in place to address impulsivity. Research also shows very clearly that the timeframe between suicidal ideation and suicidal action is very short [13]. The findings were that 75% of suicide attempts occurred within one hour of the initial suicidal thought. This very short timeframe from initial thoughts to action proves the importance for immediate access to suicide support and mental health intervention. The person at risk therefore needs to have access to the information, education and support at any time of day or night and not be dependent on obtaining a professional consultation. The question being addressed in this research is whether digital or online solutions could be a potential delivery method to provide this support and evaluate the outcomes.

The potential solution being researched in this study is the TUFMINDS program that is available as a Smartphone program and can be accessed online.

The TUFMINDS program is a series of video and audio modules that aims to:

- Increase mental resilience by using “Positive Mindfulness Cognition” – a practical positive mindset process
- Stress and insomnia management strategies
- Reduce depression, anxiety and stress
- “Suicide Crisis Module” – direct counselling for imminent suicide risk
- Recognize the signs and symptoms of suicide risk

- Know the action steps to take to help individuals at risk of suicide
- Mental Health Stigma reduction
- The practical steps to boost mental wellbeing
- Positive communication strategies
- Personal development strategies including 100% responsibility, Class Act and Goal Setting
- How to deal with negativity from others
- Active steps to recognize and eliminate negative thoughts in the mind

This program was created based on evidence-based processes and accepted medical guidelines. The modules have been formulated using lived experience guidance, medical and psychological standards as well as using established Eastern philosophies of mindfulness, meditation and thought control. The new “Positive Mindfulness Cognition” are the active steps created to control and eliminate negative thoughts [14] and shared in the publications “Mastering Negative Impulsive Thoughts” 2014 and “CEO Principles” 2017 (McIntosh & McIntosh) [15, 16].

TUFMINDS program was run in three 2 hour sessions in businesses over 3 weeks, having a total of 6 hours training in total. During this time the participants were exposed to video modules from the TUFMINDS program, each of which is around 10-15 minutes. The participants watched each video once in the group setting with 15 videos being seen (out of the total of 30 videos in the full TUFMINDS program). The program approved by managers from each business and it was the business’ decision to require all the employees to attend so participation was compulsory.

The aim of this research was to assess if universal suicide prevention strategies in the community along with active mental health intervention strategies can actively improve mental health scores, increase skills and willingness to assist a person in suicidal or emotional distress and actively moves individuals away from the point of suicidal action.

The following hypotheses were tested:

1. TUFMINDS program is associated with increased knowledge, skill, confidence and willingness to recognize, ask and actively assist a person with suicidal thoughts;
2. TUFMINDS improves the mental health scores of participants directly;
3. TUFMINDS improves the mental resilience and coping skills of participants to better manage stresses in life;
4. TUFMINDS program is not associated with increased psychological distress or reduced mood;
5. TUFMINDS is an acceptable and useful program for community use

Method

Study Design

The impact was assessed with a pre-test and post-test questionnaire and participants were assessed immediately before starting the first modules and on completion of the last session.

Participants

Participation in each business was compulsory and all staff underwent the training. The businesses involved were an accounting firm and a heavy industry construction plant representing significantly different social and educational backgrounds from unskilled manual labourers to office based accountants.

All participants signed an informed consent and only those that completed the questionnaires were included in the evaluation.

Intervention

Participants underwent the training by watching the 18 video modules of the TUFMINDS program over the 6 hours and the time was split up evenly between “Positive Mindfulness Cognition” / mindset (2 hours), suicide awareness training (2 hours) and mental wellbeing and mental illness sessions (2 hours).

Each group presented up to 25 people and there was discussion within the group and was facilitated by TUFMINDS trainers. As all the content was in the video format, the content was standard in each training so no variation in content or presenter skill would impact the outcome. For safety, the TUFMINDS trainer’s onsite also were trained and psychologically skilled with to address any emotional issues arising.

There was no subsequent reinforcement of the techniques and the participants did not have the ability to access the videos after the training so the impacts seen on the evaluations result from the single viewing of the TUFMINDS content.

Measures

Participants completed the pre and post questionnaires immediately prior to starting the program and immediately on completing the 6 hour of sessions. They were designed to measure optimism, resilience, mental health stigma, mood levels (depression, anxiety and stress), workplace parameters and coping skills. In relation to suicide, the measures were suicide knowledge (warning signs, how to ask, refer and assist the person), confidence, skill, and willingness to help a suicidal person and understanding about mental illnesses.

Demographics

The participants name, age, gender and occupation were collected. A code was then created for confidentiality of data.

Mental Health

Optimism was measured with the Life Orientation Test – Revised (LOT-R). Resilience was measured using the Brief Resilience Scale (BRS), mental health stigma using the Internalized Stigma of Mental Illness Inventory and the mood scores were measured using the Depression Anxiety Stress Score (DASS21).

Suicide and Mental Illness Knowledge

A 5 point Likert scale ranging from 1 (Very Low) to 5 (Very High) was used and asked 8 items. These started with the introduction of: “Please rate your knowledge of” and the items included: “Facts about suicide prevention”; “Suicide warning signs”; “How to ask someone who may be suicidal”; “How to persuade someone to get help”; “Information about local resource for help”; “General information about suicide and suicide prevention”; “General information about mental illness”.

Suicide Skill, Confidence and Willingness to Help

These three items were asked directly using the same 5 point Likert scale using the questions: “How skilled are you to help someone who is suicidal?”; “How confident are you to help someone who is suicidal?”; “How willing to help someone who is suicidal?”

Life Satisfaction and Stress Levels

There were also questions using the same 5 point Likert scale to assess Life Satisfaction and stress levels: “My life satisfaction overall is...”; “My stress levels at home are...”; “My stress levels at work are...”

Participants Evaluation of Program

Using the same 5 point Likert scale, participants scored the program directly with 4 items: “How would you rate the training program in how well it met its objectives”; “My overall evaluation of the program is...”; “Do you believe the training will help you in helping someone who is suicidal?”; “Would you recommend this training to others?” and “What modules did you find most useful?”

Case Detection

During each training session, the trainers observed the participants for any signs of emotional upset or distress and offered assistance immediately. The questionnaires were assessed to check for any significant mood disorders or

individuals that may be at risk from the DASS21 scores and would speak confidentially to those individuals to ensure safety and follow up care was in place.

Data Analysis

Data was analyzed directly from the pre and post questionnaires and change in levels assessed. This was performed using mean values for each outcome, standard deviation, 95% confidence levels, significance levels with p values and percentage change in actual numbers using linear regression.

Results

There were around 75 participants in the training sessions and 66 participants with completed questionnaires of which there were 42 (64%) males and 24 (36%) females. The higher proportion of males was due to the bias towards male workers in the factory. There were 4 (6%) individuals identifying as Aboriginal and Torres Strait Islanders. The reasons for not completing the questionnaires were mainly due to absence from work for one or more of the 3 sessions the program was offered.

| | Pre- Test | | Post-Test | | Results | |
|--|-----------|-----------|-----------|-----------|----------|----------|
| | Mean | 95% CI | Mean | 95% CI | p* value | % change |
| Suicide Knowledge | 21.6 | 19.7-23.5 | 31.4 | 29.9-32.9 | <.0001 | 45% |
| Skill, confidence + willingness | 59.3 | 54.3-64.2 | 77.1 | 72.9-81.2 | <.0001 | 30% |
| Depression(DASS21) | 4 | 2.75-5.25 | 2.62 | 1.62-3.62 | <.0001 | -34% |
| Anxiety(DASS21) | 3.66 | 2.58-4.74 | 2.68 | 1.70-3.67 | <.0001 | -27% |
| Stress(DASS21) | 4.82 | 3.67-5.96 | 4.24 | 3.15-5.32 | <.0001 | -12% |
| Stigma | 16.3 | 14.4-18.2 | 14.1 | 12.1-16.1 | <.0001 | -13% |
| Optimism LOT-R) | 54.3 | 50.4-58.2 | 60.6 | 55.7-65.5 | <.0001 | 12% |
| Resilience (BRS) | 19.2 | 18.1-20.3 | 21 | 19.8-22.1 | 0.98 | 9% |
| Life Satisfaction | 3.82 | 3.56-4.07 | 4.03 | 3.81-4.24 | 1 | 6% |
| Home Stress | 2.45 | 2.16-2.74 | 2.34 | 2.06-2.63 | 0.99 | -4% |
| Work Stress | 2.59 | 2.33-2.88 | 2.39 | 2.15-2.64 | 0.99 | -8% |
| Program Evaluation | - | - | 86% | 81-90% | - | - |
| Recommend to others | - | - | 90% | 86-94% | - | - |
| p* - Tests the hypothesis that Pre-test scores differ from Post-test scores | | | | | | |

Table 1: Mean scores and variables using linear regression with pre- and post-training evaluation.

Mental Health

Optimism scores as reflected by the LOT-R test increased by 12% with mental resilience measured by the BRS increasing by 9%. Mental health stigma was reduced by 13%. The DASS21 showed improvement in depression 34%, anxiety 27% and stress 12%. These all reached statistical significance except the resilience score (BRS).

Life satisfaction was increased by 6%, home stress reduced by 4% and work stress reduced by 8% without reaching statistical significance due to low numbers.

Suicide Knowledge, Skill, Confidence and Willingness to Assist

Knowledge levels were increased by 45% due to the training. All these aspects of skill, confidence and willingness to assist the emotionally distressed person improved by 30% on average. These did reach statistical significance.

Program Evaluation

Participants rated the training at 86% for usefulness and 90% would recommend it to others. Given that the participants were required to attend by their employer and there was resistance to the attending the program from a significant number of participants, this is a good outcome.

Case Detection

One person was found to have high DASS21 score and was independently approached and was already receiving treatment and was "safe". No further intervention was required. There were no significant falls in the DASS21 during the course of the training indicating no iatrogenic effects from the training.

Discussion

Key Findings

This was the first assessment of the TUFMINDS program measuring specific mood parameters with the DASS21.

Participants demonstrated significant (12-34%) improvement in the depression, anxiety and stress scores from this relatively fast intervention with only 2 hours of the 6 hours directed at mental wellbeing. The magnitude of these changes is also significant particularly because the program is provided passively with video modules and does not require skilled or trained presenters.

Optimism scores increased by 12% and mental resilience scores by 9% which support the value of the program given the resistance from a significant proportion of the participants because attendance was compulsory and the concept of “positive thinking” were initially viewed with scepticism.

The perception of all aspects of participant’s lives improved with life satisfaction up 6%, home stress down 4% and work stress down by 8%. These are all in the absence in any significant changes in their lives so the presumption is that the program changed their thinking and perception of home, work and life for the better. While positive changes were seen in all these parameters, these changes did not reach statistical significance due to low participant numbers.

Suicide knowledge was dramatically increased by 45%, and the individuals’ willingness, skill and confidence were all increased 30% both reaching statistical significance. This implies a much more aware and ready workforce to deal with emotional or suicidal issues. Again these changes occurred with only 2 hours of intervention directed at suicide knowledge and intervention steps.

The overall results are very powerfully supportive of the TUFMINDS program being effective at changing mindsets and significantly improving mental health scores and wellbeing. These statistically significant improvements in DASS21 scores without professional counselling or input supports the hypothesis that active mental health interventions are effective using digital media with the TUFMINDS program.

Limitations

The limitations of this study need to be considered when interpreting the results. Firstly, the study was performed without a control group so it cannot be guaranteed that local factors did not impact on the figures or external changes occurred to create the results seen. Secondly, the instruments for some measures like suicide skill, willingness and knowledge were designed for this study and have not been evaluated. Thirdly, the numbers of participants in the study are low so the results would need further confirmation with more participants to confirm the effects and reach greater validation of the changes that did not reach statistical significant, despite the positive trends seen overall.

While this training about suicide intervention gives the individuals the self-judged improvements, this does not necessarily translate into actual intervention or the saving of

lives and measurement of impact and interventions would be beneficial in the future.

Follow up assessment of participants at later dates would also provide valuable measurement of the longer-term benefits to be measured and further research will be needed to address these issues.

Implications

TUFMINDS presents a possible universal suicide and mental wellbeing program for use in the community. Despite the limitations listed above, this evaluation shows very strong support for the positive effects of the TUFMINDS program to improve mental wellbeing and reduces mental illness scores of depression, anxiety and stress. There is also significant improvement in optimism and mental health stigma so the program provides significant benefits personally and for social inclusiveness by reducing stigma and creating better attitudes, specifically to those suffering with mental illness. Mental resilience, life satisfaction, perceived stress at home and work were all improved but further studies are needed to evaluate the program with larger numbers.

Suicide knowledge and self-efficacy are both greatly improved which would imply that these individuals would be willing, skilled and confident to recognise and assist individuals at risk of suicide. While this does not guarantee action, the study confirms significant improvements and further studies of long-term intervention patterns would be needed to measure this impact.

The implications of a passively delivered mental wellness and suicide intervention program are enormous. There are both health cost savings and better health outcomes because this is a passive program and can be available 24 hours a day, seven days a week. The cost savings to the health budget would be made by reduced payments for professionals or speakers, facility costs and trainer training and additionally the training could be done at the person’s convenience at any time.

This information can also be accessed anywhere with internet access and it does not require the individual to talk or communicate with anyone in any way. It is known from Lifeline that many individuals are not willing to speak to a person (face to face or online) and some prefer to use SMS messaging so that service is now offered. There are still others who will not reach out for help at all and are unwilling to communicate in any way.

This process provides solutions to this group who are not willing to reach out or accept that there may be a problem because it allows them to passively gather information and understanding relevant to them without any need to accept that they have a problem, including to themselves. Once they start to watch the modules, they are likely to start to recognise their mental health patterns as unhealthy, understand that the

treatment processes can be effective and change their perspective to having hope and solution focused knowledge.

Another implication with significant impact is that this process may provide an intervention to protect individuals at the point of suicidal ideation and provide some protection before professional help can be obtained. The studies on impulsivity show that intervention needs to be in place with very little delay so having this information in an electronic form that is available 24 hours a day may provide protection to reduce the suicidal action steps and further research should be put into place to assess if this benefit is seen.

This study measured the impact of the program delivered in a form that can be easily shared online, though social media and electronically, without any need for trainers, professionals or facility costs. The benefits are potentially very significant to change the way community education is delivered to improve the mental health and resilience of the community in an effective, safe and economically sustainable way.

Further research needs to be performed using a control group, measuring the long term benefits of the program, measuring changes in suicide interventions actions taken, increasing the numbers of participants assessed to improve the statistical validity and testing the impacts across different digital media platforms.

Declarations

This study was performed by the creators of the TUFMINDS program, Dr John and Elizabeth McIntosh in the process of developing and assessing the program content and acknowledges the conflict of interest.

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