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Research Article

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Workplace Mental Wellbeing and Suicide Intervention: A Controlled Trial Evaluating TUFMINDS In the Workplace for Active Mental Health, Wellbeing and Suicide Intervention

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Abstract

Background: *Suicide rates are not falling despite increasing expenditure and effort internationally. Workplace mental health illness, absences and mental injury claims are all rising and are the fastest rising work injury cost in Australia. TUFMINDS is a training program that provides active mental health improvement, resilience and suicide intervention has potential for major workforce and cost benefits.*

Aims: *To evaluate the efficacy, acceptability and safety of the TUFMINDS program to deliver video-based or online education in the workplace. This includes active processes to improve mental wellbeing, resilience, coping and mood as well as practical training to increase suicide knowledge and ability to perform active intervention, with the training provided in a passive manner by watching videos modules.*

Method: *34 participants attended 6 hours of training watching the TUFMINDS video program in a workplace with pre and post questionnaires evaluating the changes over that time. A control group of 17 in the same organization underwent the same assessments without participating in the training.*

Results: *Participants showed significant improvement in optimism, resilience 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 significantly increased. There was no evidence of any iatrogenic effects from the training.*

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

Conclusions: *Direct video or online training in the workplace can be effective to increase mental resilience, coping and wellbeing, and reduce stress experienced at work and at home. There is also improved suicide knowledge and willingness to assist others in the suicidal crises. This study supports the hypothesis that mental health interventions can be provided safely and effectively in video or digital formats in the workplace without direct professional guidance and input.*

Introduction

Suicide is the leading cause of death in 15 – 44-year-old Australians and 25% of deaths in the 15-24-year-olds [1]. 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 [2,3].

Around 45% of Australians experience mental health conditions at some stage of their life and one in five experience mental health issue every year [4]. Workplace stress is a major risk for depression and anxiety and 38% of workers experience ongoing stress in their current job 46% believe that mental health is a “big problem” in their workplace and staff turnover caused by poor mental health environment at work-40% have changed jobs and 50% would change jobs for this reason [5].

Workcover costs for mental illnesses are the most expensive Workcover claims and cost Australian businesses $10.9 billion per year [6]. Employers in Australia are now legally obligated to ensure mentally safe workplace [7]. Research also shows that every dollar spent on effective mental health initiatives in the workplace will, on average, have a positive return on investment of $2.30 [8].

Concerns have been raised that suicide prevention programs may create iatrogenic effects of increasing suicide risk in participants especially vulnerable younger people [9,10]. However, several studies have shown this not to be the case [11-13]. These studies show the importance of monitoring any mental health program to measure any iatrogenic risk or harm.

The deficiency that exists across most existing mental wellbeing and suicide prevention programs is 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 organisations avoiding direct mental health interventions for the person in distress and limiting the programs to recognition and referral. The reluctance of individuals in emotional distress to attend services, the delay in professional appointments and services not being available after hours [14] are all well documented. It may be the case that this lack of active mental health interventions in programs that are currently available 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 [15]. 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 TUFMINDS program can be accessed 24 hours a day, in any site with telephone or internet connection and does not require professional input so has the potential to overcome many of the above barriers to receiving mental health support.

The question being addressed in this research is whether TUFMINDS video modules could be a potential delivery method to provide this training in the workplace and effectively improve mood and resilience without professional input. The TUFMINDS program is available as video and audio modules (only video modules used in this research) and it is also available in a smartphone app and 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
- Active steps to recognise and eliminate negative thoughts in the mind
- Reduce depression, anxiety and stress
- "Suicide Crisis Module" – direct counselling for imminent suicide risk
- Recognise 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

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 [16] and shared in published books "Mastering Negative Impulsive Thoughts" 2014 and "CEO Principles" 2017 [17,18].

The mental health parameters of the TUFMINDS program has already been researched to assess mental health parameters and to test the digital medium[19]. These findings showed significant improvements (10-34%) in mental resilience, optimism, depression, anxiety and stress scores and further confirmation studies were recommended.

The aim of the research in this study is to assess if the TUFMINDS in the workplace can actively improve mental resilience, optimism and coping and reduce perceived stress scores. Also measured were the level of skill, confidence and willingness to assist a person or workmate in suicidal or emotional distress.

The following hypotheses were tested:

- TUFMINDS program is associated with increased knowledge, skill, confidence and willingness to recognise, ask and actively assist a person with suicidal thoughts;
- TUFMINDS reduces the stress experienced by participants directly;
- TUFMINDS improves the mental resilience, optimism and coping skills of participants to better manage stresses in life;
- TUFMINDS program is not associated with increased psychological distress or reduced mood;

- TUFMINDS is an acceptable and useful program for workplace 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. The control group filled out the assessment questionnaires in the same weeks as the test group.

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

Participants

Participation was compulsory for the staff in the departments chosen. The organisation involved was in local government, with the participants being involved in local law enforcement activities and this group was chosen by the business as it was the department with the highest stress levels.

The control group performed the same tests at the same time as the test group and were in departments of the organisation that did not have significant direct interactions. This was planned to avoid sharing of the skills or knowledge between groups.

Intervention

TUFMINDS program was run in six 1-hour sessions in the business over six weeks, having a total of 6 hours training in total. During this time the participants were exposed to 15 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 6 hours training 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).

The program approved by managers from the business and it was their decision to require all the employees in the departments chosen to attend, so participation was compulsory.

The training of the test group was performed in two groups with under 20 people in each group. There was discussion within the group between the videos and this 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 trainers onsite also were trained and psychologically skilled with to address any emotional issues arising in the participants.

Measures

Participants completed the pre and post questionnaires immediately prior to starting the program and immediately on completing the 6 hours of training. They were designed to measure optimism, resilience, mental health stigma, perceived stress at home and at work mood levels, helping attitude score 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 Helping Attitude Score (HAS). These are all evaluated research tools that have validation.

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"; "Persuading 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?"; "General understanding of suicide and suicide prevention."

Willingness and skill to help someone who is suicidal was measured with the same Likert scale using the questions: "How **comfortable** would you feel helping someone who is suicidal", "How **confident** would you feel helping someone who is suicidal" and "How **competent** would you feel helping someone who is suicidal." These three scores were combined to give a single score.

Perceived Stress Levels and Coping levels

There were also questions using the 10-point Likert scale to assess stress levels: "What is your daily level of stress from work?" and a measurement of their feeling of stress with a 5 Point Likert scale: "During my workday, I typically feel tense or stressed out".

Participants Evaluation of Program

Using the 5-point Likert scale, participants scored the program satisfaction directly with: "What is your overall evaluation of the training?" The participants were also asked "Do you believe this training with help you in helping someone who is suicidal" with "Yes", "No" and "Unsure" as options.

Case Detection

During each training session, the trainers openly advised that if anyone was upset or distressed as a result of information that was being shown to let the trainers know and assistance would be provided. The trainers also observed the participants for any signs of emotional upset or distress and offered assistance immediately. The questionnaires were assessed to check for any significant deterioration in stress or optimism scores for individuals that may be at risk and would speak confidentially to those individuals to ensure safety and follow up care was in place.

Data Analysis

Data was analysed 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 34 participants in the test group with 19 (56%) males and 15 (44%) females and 17 in the control group with 13 (76%) males and 4 (24%) females. The higher proportion of males was due to the bias towards male workers in the business. More participants attended both groups but only those completing both questionnaires were included in the study. Absence from work from the final session when the post assessment was performed was the most common reason from non-completion of the questionnaires.

Mental Health

Optimism scores as reflected by the LOT-R test increased by 15% with mental resilience measured by the BRS increasing by 16% when compared to the control group. Stress levels at work reduced by stress 10% and personal stress experienced was reduced by 4% in the test group and 8% when compared to the control group. These measures all reached statistical significance with p values less than 0.001.

Mental health stigma was reduced by 7% in the test group and the control group reduced by 2% achieving a 5% comparative reduction. Helping attitude scores increased by 3% in the test group and fell 6% in the control group, resulting in an overall improvement of 9%. Neither of these levels of change achieved statistical significance.

Suicide Knowledge, Skill, Confidence and Willingness to Assist

Knowledge levels were increased by 45% due to the training. All three aspects of competence, confidence and willingness (comfort) levels to assist the emotionally distressed person improved by 33% overall and suicide knowledge increased by 22% overall, both reaching statistical significance.

Program Evaluation

Participants rated the overall value of the training at 75% and 76% felt the training helped them to give a mentally distressed person assistance with 14% unsure and no-one stating the negative.

Given that participation was made compulsory by their employer, there was significant resistance to the attending and participating in the program by a number of employees with them showing active obstruction and non-participation through the program, this is a good outcome.

	Pre-test		Post-test		% Test Change	Pre-test Control		Post-test Control		Control Change	%Overall Change	P* value
	Mean	95%CI	Mean	95%CI		Mean	95% CI	Mean	95% CI			
Numbers	34					17						
Male/Female	19/15					13/4						
Optimism	56.2	51.2-61.2	65.4	60.8-70.0	16%	56.6	50.8-62.4	57.2	51.1-63.1	1%	15%	>0.0001
Resilience	66.4	62.2-70.6	71.6	68.0-75.2	8%	75	70.0-80.0	69	63.0-75.1	-8%	16%	>0.0001

Daily Work Stress	57.1	49.5-54.6	52.1	44.8-59.4	-10%	48.2	41.0-55.5	48.2	41.2-55.3	0%	-10%	>0.0001
Personal Stress	64.7	56.8-72.7	62.4	56.7-68.0	-4%	57.6	50.1-65.2	60	51.3-67.3	4%	-8%	>0.0001
Self-Efficacy	64.7	59.6-69.8	78.6	75.2-82.0	22%	65.9	58.0-73.8	58.8	52.4-65.3	-11%	33%	>0.0001
Suicide Knowledge	56.1	51.9-60.3	72.6	68.7-76.5	24%	58.2	51.4-64.9	59.2	52.8-65.5	2%	22%	>0.0001
Stigma	38.8	36.6-40.9	36.1	33.6-38.7	-7%	41.2	39.1-43.3	40.2	38.1-42.6	-2%	-5%	0.59
Helping Attitude	79	76.4-81.7	81.6	78.5-84.7	3%	85.2	82.4-88.2	79.8	73.2-86.3	-6%%	9%	0.99
Usefulness of Training					75%						75%	
Useful for suicide assistance	Yes 76%	Unsure 14%	No 0%								76%	

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.

Case Detection

There was one incident where the content triggered an emotional upset in a participant who had been through a recent bereavement and counselling was provided by the trainers. There was already professional support in place and the strategies in the TUFMINDS program were then reinforced to assist the person. The issue was successfully resolved.

There was no significant deterioration in the mental health scores of any participants during the course of the training indicating no iatrogenic effects from the training.

Discussion

Key Findings

This workplace assessment of the TUFMINDS program measuring specific mood and resilience impacts showed excellent improvements considering the resistance of the participants to mindset processes and the compulsory nature of the participant selection.

The 15% improvements in LOT-R scores (optimism) and 16% in mental resilience were seen and were the effect of the TUFMINDS program which teaches positive mindfulness processes that actively recognise and eliminate negative thoughts and focus on positive ways to solve problems at hand. The positive communication and conflict resolution processes also improve interpersonal interaction and problem solving without personal attacks or denigration.

Participants demonstrated significant (8-10%) improvement in workplace stress and personal stress levels without any practical changes occurring to the workplace during this time. As there was no change in the workplace, the improvement was caused by their improved cognitive processing with the TUFMINDS processes or positive thinking.

The fact that this program can actively improve individuals stress levels personally, their perception of workplace stress and their LOT-R scores implies that many health benefits as improved LOT-R scores are associated with reduced heart attacks [20], strokes [21], 9 years longer life [22] and improved mental health [23].

The magnitude of the changes seen with TUFMINDS is also very significant because the program is provided passively with video modules that do not require skilled or trained presenters. Also creating such a level of change from a group of relatively unwilling and openly resistant participants who were sceptical of the concept of "positive thinking" reinforces the value and effectiveness of the program.

Suicide knowledge was significantly increased by 22%, and the individuals' ability to assist a suicidal or mentally distressed person ("self- efficacy") was increased 33%. This implies that any employees that undertake this program will be significantly more aware and ready workforce to deal with emotional or suicidal crises that arise in the workplace or in their personal lives. Note that these changes occurred with less than 1.5 hours of videos directed at suicide knowledge and intervention steps.

There were no iatrogenic effects found from the training with no significant deterioration in mental health scores from any individuals within the test group and evaluation and helpfulness of the training also scored highly with no individual giving a negative assessment.

This research therefore supports the 5 hypotheses tested that:

- TUFMINDS program was confirmed to created increased knowledge, skill, confidence and willingness to recognise, ask and actively assist a person with suicidal thoughts;

- TUFMINDS does reduce the workplace and personal stress levels experienced by participants directly;
- TUFMINDS does improve the mental resilience, optimism and coping skills of participants to better manage stresses in life;
- TUFMINDS program is not associated with increased psychological distress or reduced mood;
- TUFMINDS is an acceptable and useful program for workplace use

Limitations

The limitations of this study need to be considered when interpreting the results. Firstly, the while most of the scores use validated measures, instruments for suicide competence, confidence, comfort and knowledge were designed for this study and have not been evaluated. Secondly, 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 significance, despite the positive trends seen overall. Note that these figures parallel the previous study [19] so this does reinforce the validation of TUFMINDS.

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 a later date would also provide valuable measurement of the long-term benefits so further research would be needed to address these issues.

Implications

TUFMINDS presents an active mental wellbeing program with great potential to improve the mental resilience, coping and mood levels of staff that is shown to be effective workplaces in this study. Despite the limitations listed above, this evaluation shows very strong support for the positive effects of the TUFMINDS program to improve mental wellbeing, personal and workplace stress, optimism and mental health stigma. The program provides significant benefits directly to each employee personally but also has potential to improve the workplace atmosphere, culture, personal interactions and relationships.

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 for workplaces. There are cost savings to provide training in this manner and significantly improved health outcomes resulting in cost savings to businesses from reduced absenteeism and reduced mental health claims.

The additional benefit is that TUFMINDS is a passive program and can be available 24 hours a day, seven days a week through online access or on smartphones. This would allow individuals to access the information at any time day or night to directly help someone in distress or to reinforce information they learnt previously from the TUFMINDS program.

This program also has the ability to protect individuals at the point of suicidal action 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 shows that digital delivery of this information is effective and opens up the ability to share and educate individuals more broadly and in remote areas with less disadvantage from location. It also overcomes the barriers and costs of accessing trainers, professionals or facility costs. The benefits are potentially huge to provide effective workplace mental health wellbeing and resilience in a manner that is effective, safe, sustainable and economical.

Further research needs to be performed 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 in the measures not reaching significance 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 acknowledge the conflict of interest.

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Dr Elizabeth McIntosh

Dr Elizabeth McIntosh, PhD, is a clinical counsellor with the Mackay Superclinic Group and researcher with the University of Sedona, USA and has been researching mindfulness and positive mindset and behavioural patterns for decades. While responsible for running international clinical medical and mental health services, she is also the co-creator of TUFMINDS, an active mental wellbeing and suicide intervention program for community use. She is researching the innovative use of digital media to improve health outcomes in a scalable and economic manner.