Enhancing frontline health professionals' resilience:

MedTRiM – An evaluation of the effectiveness of a training programme to assist in improving the resilience of health professionals on the frontline of healthcare delivery

Final Report

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Table of Contents

Introduction

Health professionals are exposed to high degrees of job demand, which affect health status and job satisfaction[1], at the same time as being under increasing pressure to deliver without making mistakes in an environment that expects perfection. This is occurring against a background of medicolegal pressures, increasing workload and decreasing resources. Health professionals at the frontline of patient care (doctors, nurses, paramedics, dentists) are assumed to be resilient or mentally tough but the consequences of failure for both patients and staff can be significant.

Healthcare settings, within hospital and community, are environments which often require all health professionals to perform under pressure. A report of the Beyond Blue National Mental Health Survey of Doctors and Medical Students (published in 2013) provides a candid account of psychological distress experienced by doctors, more particularly young doctors.[2] A meta-analysis of 51 studies on harassment and discrimination in medical training showed that 59.4% of medical trainees had experienced at least one form of harassment or discrimination during their training.[3] A study of dentists for the British Dental Association reported mental health issues and burnout lead to a decline in professional standards and those leaving the profession early.[4] Studies of midwives showed stress often resulted in burnout[5], while for paramedics stress as a consequence of care delivery is often coupled with depression and anxiety.[6,7]

Doctors, nurses, midwives and paramedics provide care for individuals who are ill, injured, or involved with life-threatening trauma or death and dying.[8,9] Those practising within the health service are under increasing demands, where human error can have devastating consequences. The job of being a doctor is becoming increasingly difficult.[10] As a result, the incidence of errors increases along with the amount of sickness and stress leave, and under-performance is gathering scrutiny from various regulatory bodies such as the General Medical Council, British Dental Association and the Nursing and Midwifery Council.

Evidence that the job has become more difficult relates to a range of factors including organisational/system factors, societal factors and clinical factors.[11] Specifically, these include: pressure of patient through-put; patient expectations; lack of organisational and social support; increasing isolation and no time to develop teams and communities of practice; increasingly complex cases and patient co-morbidities. These factors can lead to an increase in errors.[12] Errors may be linked to diagnosis and treatment, performance of skills and errors in equipment use.

Enhancing doctor resilience may have the potential to reduce errors. Resilience involves the ability to be mentally tough, manage cognitive workload, employment of strategies for dealing with too much going distraction[13, 14] and to know when to call for help. Resilience can be acquired through cognitive skills development, as shown within human factors research and sports psychology.[15] Preparedness for practice through appropriate training is an area that can help doctors to better manage their responses under pressure.

The Scope of this Work

The MedTRiM programme has been successfully run with senior clinicians across Wales. With a view to maximise the impact (professional and personal wellbeing of clinicians and patient safety), reach and commercial potential of this programme it is essential that we look at the ability of it to transfer effectively across to other healthcare domains (e.g. dental).

Principle aim:

- o To evaluate the effectiveness of the MedTRiM training with allied health professionals.

Objectives:

- o To build upon our evaluation of the MedTRiM training programme by looking at the transferability (impact and effectiveness) of the MedTRiM programme to allied health professionals (e.g. nurses, paramedics, dentists).

Methods

This work used a mixed-methods approach.

Participants and recruitment

Participation at all stages was voluntary.

Sample

The sample comprised of various individuals working in healthcare settings (primary, secondary and community) across Wales. The MedTRiM training workshop was advertised through social media, twitter and the Wales Deanery website, as well as those on the workshop waiting lists.

- o All those registered to attend the MedTRiM training workshops were sent an email inviting them to complete an online pre-training questionnaire, along with a participant information sheet.
- o All those who had attended the MedTRiM training workshops were sent an email inviting them to complete the online post-training questionnaire.
- o All those who had attended the MedTRiM training workshops were sent an email inviting them to take part in a short 10-15 minute telephone interview four to six months post-training to discuss their training experience and use of skills/strategies.

Data collection

Questionnaires

Pre-training

The questionnaire collected data related to self-perceived levels of resilience and needs of health practitioners. It contained both open and closed questions and made use of validated and other well-used measures. Demographic items included gender, training grade, specialty and Local Education Provider. We included five validated measures: 'stages of change'[16], the 'resilience scale'[17], 'professional identity'[18], 'cognitive flexibility'[19], and the 'group identification scale'.[20] Free-text options were included to give

respondents the opportunity to provide specific examples related to their perceived training needs and prior experience.

Post-training

The post-training questionnaire looked to measure any effect of the training on individuals and comprised many items that were included in the pre-training questionnaire, such as the validated measures. Questions also asked which aspects of the MedTRiM training had been most memorable: post-training engagement activity and any challenges to discharging learning; understanding and confidence in using skills; and further training and support needs.

Post-training follow-up interview

Those interviewed were asked questions in relation to their training experience, what had been useful, and whether they had used in their clinical practice any of the skills/strategies they had been introduced to during the training.

Data Analysis

Quantitative data underwent statistical analysis using SPSS (t-test, Wilcoxon signed-rank test). Qualitative data from open-comments and interviews were analysed thematically.[21]

Research ethics

This study received ethical approval from the Postgraduate School for Medical and Dental Education Research Ethics Committee, Cardiff University (18.6.2016).

Results

Pre-training questionnaire

Sixty-seven respondents completed the pre-training questionnaire between June and October 2017, representing an 88% response rate. The mean age of respondents was 41 years, with 75% of respondents identifying as female.

When asked to indicate in which Health Board they worked, all except Powys were represented by at least one respondent, most reported working in Cardiff and Vale (21%, n=14), Aneurin Bevan (20%, n=13) and Abertawe Bro Morgannwyg (15%, n=10). Those who indicated 'other' (21%), reported working in England (n=11), Scotland (n=1) and Northern Ireland (n=1) and working independently unrelated to a Health Board (n=1), see Table 1.

Table1: In which Health Board are you currently working?

Health Board	% (n)
Cardiff and Vale UHB	21% (14)
Aneurin Bevan UHB	20% (13)
Abertawe Bro Morganngwg UHB	15% (10)
Hywel Dda UHB	11% (7)
Betsi Cadwaladr UHB	6% (4)
Velindre NHS Trust	3%(2)
Cwm Taf UHB	2% (1)
Public Health Wales	2% (1)
Powys Teaching Health Board	0% (0)
Other	21% (14)

The training grades of respondents were varied (see Table 2). Most identified as consultants (n=22), ST/CT (n=26), foundation trainees (n=3), SAS grade (n=3), Paramedics (n=2), SPR (n=4), nurse (n=3), those indicating 'other' included a GP, retired consultant dental officer and clinical fellow. It is interesting to note that while the course was advertised across Health Board platforms and Twitter, very few attendees were not doctors or doctors in training. Owing to the very small number of non-doctors it was not possible to perform comparative statistics by professional group.

Twenty-seven per cent of respondents indicated being supervisors.

Table 2: Training grade

	(n)
ST/CT	29
Consultants	22
Foundation Trainee	3
SAS grade	3
Paramedic	2
SPR	2
GP	1
Retired Consultant Dental Officer	1
Dental associate	1
Clinical Fellow	1
Nurse	1

Previous training

Respondents were asked whether they had previously undertaken or experienced any form of resilience or mental toughness training through either formal training or using books/eLearning. Eighteen per cent of respondents indicated having or experiencing formal training, examples of which were short courses or seminars with experts (such as meditation and yoga, army training and resilience). A small proportion (15%; n=10) indicated using books and/or eLearning. Respondents consulted specific books (e.g. Peak[22], Rise of Superman[23], Thirukkural also known as the Kural, a classic Tamil text on ethics and morality) and resources on websites or apps (e.g. Headspace).

Stages of change

In relation to stress management, respondents were invited to indicate at which point on the 'stages of change' measure they positioned themselves.[16] Stress management strategies include regular relaxation and physical activity, talking with others and/or making time for social activities. Respondents were asked to tick one option from the 5-point scale ranging from '*pre-contemplation*' (not intending to begin in the next 6 months) to '*maintenance*' (have been practicing for at least 6 months), see Table 3.

Most respondents (62%) indicated being in the latter stages of change: 14% (n= 9) at the action stage (practicing, but for less than six months) and 48% (n=32) in the maintenance stage (have been practising for at least 6 months). Just over a third (38%) indicated being in the earlier stages of change (pre-contemplation, contemplation and preparation). The results are shown in Table 3.

Table 3: Stages of Change: Do you effectively practise stress management in daily life?

Stage of Change	% (n)
Pre-contemplation (not intending to begin in the next 6 months)	11% (7)
Contemplation (intending to begin in the next 6 months)	23% (15)
Preparation (intending to begin in the next 30 days)	5% (3)
Action (practicing, but for less than 6 months)	14% (9)
Maintenance (have been practicing for at least 6 months)	48% (32)
Total	66

We asked respondents to indicate whether they had experienced a specific event in the six-months prior to completing the questionnaire where they felt that some sort of mental toughness or resilience training would have been useful. The majority (69%, n=46) reported experiencing such an event. Forty-four respondents provided examples of an event in the free-text box. The examples given concerned events both in and out of work: managing workload, interpersonal difficulties and conflict, bereavement, family issues, patients, trauma and negative clinical outcomes, expectations of others, or high professional expectations of themselves:

> "*Difficult relationships within consultant colleagues, difficult negotiations with managers*" (prt.3.68.m.d)

> "*Dealing with adverse clinical outcome and the harsh criticism in the risk management team*." (prt.1.18.f.td)

> "*Anxiety arising from patient interactions. Depression as a result of patient interactions*." (prt.2.38.f.d)

Resilience

Levels of resilience were measured by asking respondents to rate their level of agreement to 25 short statements on a 5-point scale (from '*not at all true*' to '*true nearly all of the time*'). In line with the measure, each point on the scale was then converted to a number from 0-4, where *not at all true* scored 0 and *nearly all of the time* scored 4. Thereby providing each individual a possible total score of 100. This validated measure considers those who score above 70 as possessing a high level of resilience. Results from the pre-training questionnaire show just over a third (37%, n=25) of all respondents scored >70 displaying higher levels of resilience. Of these, 76% (n=19) were female, 24% (n=6) were male. When calculating professional groups, 31% (9/29) of doctors and 38% (12/32) trainee doctors displayed high resilience, while 60% (3/5) were allied health professionals.

Looking at some of the ratings by statement we can see that the majority of respondents indicated '*often true or true nearly all of the time*' to feeling *pride in your achievements* (82%, n=55), with 81% (n=54) indicating *often true* and *true nearly all of the time* to having *close and secure relationships* and *past success gives confidence for a new challenge* (84%, n=56). We can also see from the results that there are substantial numbers of health professionals feeling that *sometimes fate or faith can help* (76%, n=51; '*sometimes true/often true/true nearly all of the time*'), nearly half (45%, n=30) indicated '*often true/true nearly all of the time*' that *things happen for a reason* and 46% (n=31)

reporting '*rarely true/sometimes true*' to feeling *in control of their life*'. However, 61% (n=41) felt unable to handle unpleasant feelings ('*rarely/sometimes true*') see Table 4.

Table 4: CD-RISC: Thinking back over how you have felt the last month

	Not at all true	Rarely true	Sometimes true	Often true	True nearly all of the time
Pride in your achievements	-	-	18% (12)	48% (32)	34% (23)
Close and secure relationships	-	3% (2)	16% (11)	46% (31)	34% (23)
Past success gives confidence for a new challenge	-	1% (1)	15% (10)	60% (40)	24% (16)
You work to attain your goals	-	-	19% (13)	57% (38)	24% (16)
Best effort no matter what	-	1% (1)	24% (16)	52% (35)	22% (15)
See the humorous side of things	-	6% (4)	24% (16)	48% (32)	22% (15)
Know where to turn for help	-	12% (8)	28% (19)	40% (27)	19% (13)
Things happen for a reason	-	18% (12)	37% (25)	25% (17)	19% (13)
Strong sense of purpose	-	4% (3)	30% (20)	52% (35)	13% (9)
Tend to bounce back after illness or hardship	-	6% (4)	31% (21)	49% (33)	13% (9)
Adapt to change*	-	1% (1)	39% (26)	46% (31)	13% (9)
Prefer to take the lead in problem solving	-	7% (5)	33% (22)	46% (31)	13% (9)
I like challenges	-	6% (4)	43% (29)	37% (25)	13% (9)
Under pressure, focus and think clearly	-	3% (2)	31% (21)	54% (36)	12% (8)
Think of self as strong person	-	12% (8)	33% (22)	43% (29)	12% (8)
When things look hopeless, I don't give up	-	6% (4)	22% (15)	61% (41)	10% (7)
You can achieve your goals	-	3% (2)	33% (22)	55% (37)	9% (6)
Coping with stress strengthens	-	7% (5)	43% (29)	40% (27)	9% (6)
In control of your life	-	12% (8)	42% (28)	37% (25)	9% (6)
Can deal with whatever comes	-	7% (5)	39% (26)	46% (31)	7% (5)
Sometimes fate or faith can help	-	24% (16)	49% (33)	19% (13)	7% (5)
Not easily discourage by failure	-	13% (9)	42% (28)	40% (27)	4% (3)
Can handle unpleasant feelings	-	16% (11)	45% (30)	36% (24)	3% (2)
Make unpopular or difficult decisions	-	24% (16)	42% (28)	31% (21)	3% (2)
Have to act on a hunch	-	10% (7)	61% (41)	25% (17)	3% (2)

Professional Identity

To explore participants' sense of professional identity[18], respondents were asked to rate their level of agreement on a five-point scale from '*strongly disagree*' to '*strongly agree*', to number of statements (see Table 5). Looking at individual ratings for items we see indications of strong professional identity. The vast majority rated between 4-5 on the 5-point scale (where 5=strongly agree) '*I am pleased to belong to this profession*'. It is worth noting that not all participants disagreed with items relating to negative aspects of professional identity (see Table 5). In response to statements, 18% (n=12) rated between 3-5 on the 5-point scale (where 5=strongly agree): '*I try to hide belonging to this profession*' and '*I find myself making excuses for belonging to this profession*', and 13% (n=9) rated (between 3-5), while 12% (n=8) rated between 3-4 to the statement '*I am often ashamed to admit that I am a member of this profession*'.

Table 5: Professional Identity: How do you feel about your profession?

	1=Strongly Disagree and 5=Strongly Agree					M
	1	2	3	4	5	
Being a member of this profession is important to me	1% (1)	3% (2)	13% (9)	36% (24)	46% (31)	4.22
I am pleased to belong to this profession	3% (2)	4% (3)	10% (7)	34% (23)	48% (32)	4.19
I feel like I am a member of this profession	1% (1)	-	16% (11)	46% (31)	36% (24)	4.15
I can identify positively with members of this profession	3% (2)	-	16% (11)	45% (30)	36% (24)	4.10
I feel I have strong ties with members of this profession*	2% (1)	5% (3)	22% (14)	40% (26)	32% (21)	3.97
I feel I share characteristics with other members of the profession	3% (2)	-	21% (14)	58% (39)	18% (12)	3.88
I try to hide belonging to this profession	60% (40)	22% (15)	15% (10)	1% (1)	1% (1)	1.63
I find myself making excuses for belonging to this profession	55% (37)	31% (21)	10% (7)	1% (1)	1% (1)	1.63
I am often ashamed to admit that I am a member of this profession	66% (44)	22% (15)	6% (4)	1% (1)	4% (1)	1.57

*% of 65 respondents

Cognitive flexibility

We asked respondents to rate their level of agreement with statements regarding how they behave when working and learning together with other people in a team. Respondents were asked to rate their level of agreement on a 5-point Likert scale, where 1='strongly disagree' and 5='strongly agree'.

Almost all felt they had choices about how to behave and did not find it difficult to communicate ideas; 85% indicated '*not having difficulty in using knowledge on a given topic in real-life situations*' and '*felt sufficiently confident to try new things*' (between 1-3). However, nearly half (46%, n=31) indicated '*avoiding unusual situations*'. (see Table 6).

Table 6: Cognitive Flexibility: Working and learning together with others in a team

When working/learning together with other people in a team…	1=Strongly Disagree and 5=Strongly Agree					M
	1	2	3	4	5	
I am willing to listen and consider alternative for handling a problem	-	3% (2)	19% (13)	48% (32)	30% (20)	4.04
I am willing to work at creative solutions to problems	-	3% (2)	19% (13)	60% (40)	18% (12)	3.93
I can communicate an idea in many different ways	1% (1)	1% (1)	24% (16)	61% (41)	12% (8)	3.81
In any given situation, I am able to act appropriately*	-	5% (3)	26% (17)	56% (37)	14% (9)	3.79
My behaviour is as a result of conscious decisions that I make	4% (3)	4% (3)	22% (15)	61% (41)	7% (5)	3.63
I have the self-confidence necessary to try different ways of behaving	1% (1)	16% (11)	19% (13)	54% (36)	9% (6)	3.52
I have many possible ways of behaving in any given situation	-	12% (8)	39% (26)	40% (27)	9% (6)	3.46
I avoid unusual situations	13% (9)	40% (27)	28% (19)	15% (10)	3% (2)	2.54
I can find workable solutions to seemingly unsolvable problems	-	6% (4)	55% (37)	37% (25)	1% (1)	3.34
I have difficulty using my knowledge on a given topic in real-life situations	21% (14)	43% (29)	21% (14)	12% (8)	3% (2)	2.33
I seldom seem to have choices when deciding how to behave	16% (11)	51% (34)	22% (15)	6% (4)	4% (3)	2.31
I never get to make decisions	21% (14)	46% (31)	24% (16)	7% (5)	1% (1)	2.22

*% of 66 respondents

Group identification

Results from the Group Identification scale showed that for all items nearly half of respondents indicated having high personal investment in their group identity. Most (69%, n=46) rated 4-5 on the 5-point scale (where 1='strongly disagree' and 5='strongly agree') that they were interested in what others thought of their hospital or department. Around half, (49%, n=33) agreed '*if someone praises the hospital/department it feels like a personal compliment*', and would feel embarrassed '*if a story in the media criticised the hospital/department*' (54%, n=36). All results are given in Table 7.

Table 7: Group Identification Scale

	1=Strongly Disagree and 5=Strongly Agree					M
	1	2	3	4	5	
I am very interested in what other think about my hospital/ department	1% (1)	9% (6)	21% (14)	52% (35)	16% (11)	3.73
If a story in the media criticised the hospital/department, I would feel embarrassed.	6% (4)	13% (9)	27% (18)	39% (26)	15% (10)	3.43
When someone praises this hospital/department it feels like a personal compliment.	6% (4)	9% (6)	36% (24)	45% (30)	4% (3)	3.33
When someone criticises my hospital/department it feels like an insult	1% (1)	19% (13)	37% (25)	33% (22)	9% (6)	3.28
The hospital/department's successes are my successes	7% (5)	15% (10)	39% (26)	30% (20)	9% (6)	3.18

When asked about training they were particularly interested in acquiring, 54 respondents provided free-text comments. These included coping strategies, skills for personal resilience and confidence, skills to develop/support others/colleagues' resilience, skills for managing stress and behavioural responses, managing work demands and work-life balance and skills to better achieve goals (see Table 8).

Table 8: Training participants were particularly interested in acquiring (n=54)*

Themes	n respondents	Example
Skills for managing stress and behavioural responses	18	"*Handling stressful situations more effectively. Being less phased by pressured situations*" (prt.1.12.f)
Skills to develop/support others/colleagues' resilience	17	"*Challenging organisations to provide support for trainees, raising concerns and talking about impact of working environment on wellbeing*" (prt.2.37.f)
Skills for personal resilience and confidence	16	"*Resilience as our work environment has become increasingly more pressurised with time*" (prt.1.34.f.d)
Coping strategies	9	"*Building confidence, dealing with failure, accepting criticism*" (prt.1.26.f)
Managing work demands and work-life balance	7	"*Improving my work life balance*" (prt.2.44.f.td)
Skills to better achieve goals	4	"*Improve effectiveness as clinical lead – negotiation skills*" (prt.3.68.m.d)

*some respondents provided more than one suggestion

Respondents were asked to indicate, on a 5-point scale (never, rarely, monthly, weekly and daily) how often they felt they would use or apply these skills. Over half (58%, n=38) expected to use their skills on a 'daily' basis, and a further 36% weekly.

The anticipated barriers to applying the skills learnt from the MedTRiM training programme were identified by the respondents (see Table 9) as: time, application in day-to-day life and work demands, the attitude of colleagues or their resistance, ability to transfer skills in stressful situations, forgetting, and maintaining new approaches:

> "*To date my coping mechanism has included constant mulling over multiple problems and self-criticism which I will find difficult to change*" (prt.3.63.f)

> "*Time, fear, laziness and tiredness, low self-confidence*" (prt.1.22.f)

Table 9: Factors that might inhibit applying skills/strategies

Engagement
Engagement/staffing
Time outside clinical commitments
Lack of project support + resistance to change
Training
Training into practice
Adequate level of skill/training to undertake project
Individual factors
Taking time to practice strategies/skills
Confidence
Barrier to implementation
Time
Lack of support for implementation
Organisational culture

Summary of key points:

- 69% of respondents reported experiencing a specific event where resilience and mental toughness training would have been useful. Events described by respondents happened both in and out of work.
- Just 37% of respondents displayed high resilience scoring >70.
- Respondents indicated a state of readiness to be able to manage negative events for themselves and also to support others.
- The majority of respondents anticipated using skills/strategies learned 'daily/weekly'.
- Time was cited as the greatest barrier with regards to implementation and practicing of skills.

Completed post-training questionnaires were received from 24 respondents (32% response rate), with a mean age of 41 years. Most respondents indicated working in Aneurin Bevan (25%, n=6), followed by Abertawe Morgannwg and Cardiff and Vale (17%, n=4 respectively) see Table 10. Of those who indicated 'other' (21%), four reported working in England (n=2), Scotland (n=1), Northern Ireland (n=1) and working independently unrelated to a Health Board (n=1).

Table 10: In which LEP are you currently working?

Local Education Provider	% (n)
Aneurin Bevan UHB	25% (6)
Abertawe Bro Morgannwyg	17% (4)
Cardiff and Vale UHB	17% (4)
Hywel Dda UHB	12% (3)
Cwm Taf UHB	4% (1)
Betsi Cadwaladr UHB	4% (1)
Powys Teaching Local Health Board	0% (0)
Other	21% (5)

Of the sample, 25% (n=6) indicated being both an Educational Supervisor and Named Clinical Supervisor, one individual was an Educational Supervisor and another a Named Clinical Supervisor only, while 67% (n=16) reported being 'neither'. This is useful when we consider the potential for reach with regards cascading learning from the training to those doctors in training and under supervision.

The vast majority of those responding to the post-training survey were doctors, there were only two individuals currently practicing who were not. Individuals identified practicing in various specialties: anaesthetics (n=6); obstetrics and gynaecology (n=3); emergency medicine (n=2); paediatrics (n=2); surgery (n=2); and single individuals from haematology, rheumatology, trauma and orthopaedics, general practitioner, neonatology, pre-hospital (paramedic) and specialist health visitor. The training grades of respondents were varied. Of those responding most identified as CT/ST (48%, n=10), consultants (24%, n=3), one at SAS grade, band 7 nurse, paramedic and a retired consultant.

In terms of using skills that were taught in the workshop, we asked respondents to indicate whether they had experienced a specific event in the four-six months where the MedTRiM training they had would have been useful. 75% (n=18) indicated 'yes'. Ten respondents provided examples of what they did and for whom. Four individuals used coping skills for themselves (e.g. coping with illness and time off work, trying to adopt many of the practices in own work):

> "*I have supported a friend through a very difficult period at work and used lots of the MedTRiM course as suggestions. I have also tried to adopt many of the practices in my own work life and feel generally that these techniques have helped*" (pt.13.f).

Four individuals cited providing support to others (e.g. debriefing staff after traumatic cardiac arrests in children, supporting a friend through a bereavement, raising the issue of support); "*to talk to a trainee about a difficult experience*" (pt.28.f). Strategies used

included the stress bucket, keeping a positive outlook, power breath and the gratitude diary.

In this post-training questionnaire, we asked respondents to complete the resilience measure. Results show just under half (46%, n=11) of respondents scored >70 displaying higher levels of resilience. A matched-pairs t-test showed that on average participants ratings of resilience significantly increased post-training (M = 69.14, SE = 1.79) compared to pre-training scores (M = 65.19, SE = 2.36), $t(20)$ = -2.04, p < .05, r = -.44. Sixteen respondents displayed an improvement in their resilience scores, however four showed a reduction and one stayed the same. As before, most of those scoring high resilience were female (64%, n=7), with just over a third identifying as male (36%, n=4).

Ratings of agreement provided in the post-training questionnaire overall show some similarities to those from the pre-training questionnaire. The majority of respondents continued to rate higher agreement ('often true or true nearly all of the time') to feeling *pride in your achievements* (96%, n=23), with 71% (n=17) indicating 'often true and true nearly all of the time' to having *close and secure relationships*.

To gain a better idea of change we looked at matched data from those who completed both pre- and post-training questionnaires. Table 11 presents the comparative data. Cells highlighted in orange, show the increase in ratings to those in the pre-training questionnaire, while cells highlighted in yellow show a decrease in ratings.

As discussed above, the matched data show a significant increase compared to post-data. Numbers of healthcare professionals feeling that *sometimes fate or faith can help* remained unchanged (81%, n=17); 'sometimes true/often true/true nearly all of the time'), however a reduction was observed for levels of agreement ('often true or true nearly all of the time') to the statements '*close and secure relationships'* (67%, n=14) and '*things happen for a reason'* (38%, n=8; previously 48%, n=10). We can see an increase in those reporting 'rarely true or sometimes true' to feeling '*you can achieve your goals'* and *coping with stress strengthens*' (see Table 11).

Table 11: CD-RISC: Thinking back over how you have felt the last month comparing matched pairs: pre- and post-training scores (n=21)

		Not at all true	Rarely true	Sometimes true	Often true	True nearly all of the time
Pride in your achievements	Pre	-	-	19% (4)	48% (10)	33% (7)
	Post	-	-	5% (1)	57% (12)	38% (8)
Close and secure relationships	Pre	-	-	10% (2)	52% (11)	38% (8)
	Post	-	-	33% (7)	29% (6)	38% (8)
Strong sense of purpose	Pre	-	5% (1)	43% (9)	43% (9)	10% (2)
	Post	-	10% (2)	19% (4)	43% (9)	29% (6)
You work to attain your goals	Pre	-	-	24% (5)	57% (12)	19% (4)
	Post	-	-	10% (2)	71% (15)	19% (4)
See the humorous side of things	Pre	-	10% (2)	19% (4)	48% (10)	24% (5)
	Post	-	-	10% (2)	62% (13)	29% (6)
Best effort no matter what	Pre			43% (9)	48% (10)	10% (2)
	Post	-	-	29% (6)	52% (11)	19% (4)
Past success gives confidence for new challenges	Pre		5% (1)	24% (5)	48% (10)	24% (5)
	Post	-		10% (2)	67% (14)	24% (5)
Under pressure, focus and think clearly	Pre		5% (1)	33% (7)	52% (11)	10% (2)
	Post		-	24% (5)	57% (12)	19% (4)
Know where to turn for help	Pre	-	14% (3)	24% (5)	33% (7)	29% (6)
	Post	-	5% (1)	10% (2)	62% (13)	24% (5)
Prefer to take the lead in problem solving	Pre	-	5% (1)	38% (8)	48% (10)	10% (2)
	Post	-	5% (1)	19% (4)	62% (13)	14% (3)
I like challenges	Pre	-	10% (2)	38% (8)	43% (9)	10% (2)
	Post	-	-	33% (7)	52% (11)	14% (3)
Adapt to change	Pre	-	-	38% (8)	48% (10)	14% (3)
	Post	-	5% (1)	29% (6)	48% (10)	19% (4)
Think of self as strong person	Pre		14% (3)	29% (6)	48% (10)	10% (2)
	Post	-	10% (2)	29% (6)	52% (11)	10% (2)
Tend to bounce back after illness or hardship	Pre	-	-	29% (6)	57% (12)	14% (3)
	Post	-	5% (1)	33% (7)	48% (10)	14% (3)
Coping with stress strengthens	Pre	-	10% (2)	43% (9)	38% (8)	10% (2)
	Post	5% (1)	10% (2)	29% (6)	38% (8)	19% (4)
When things look hopeless, I don't give up	Pre	-	-	33% (7)	67% (14)	-
	Post	-	-	48% (10)	43% (9)	10% (2)
Things happen for a reason	Pre	-	24% (5)	29% (6)	24% (5)	24% (5)
	Post	10% (2)	5% (1)	48% (10)	24% (5)	14% (3)
In control of your life	Pre	-	14% (3)	38% (8)	43% (9)	5% (1)
	Post	-	5% (1)	14% (3)	71% (15)	10% (2)
Sometimes fate or faith can help	Pre	-	24% (5)	43% (9)	19% (4)	14% (3)
	Post	14% (3)	10% (2)	43% (9)	19% (4)	14% (3)
Not easily discourage by failure	Pre	-	24% (5)	33% (7)	38% (8)	5% (1)
	Post	5% (1)	-	43% (9)	48% (10)	5% (1)
Can deal with whatever comes	Pre	-	14% (3)	38% (8)	43% (9)	5% (1)
	Post	-	5% (1)	29% (6)	57% (12)	10% (2)
You can achieve your goals	Pre	-	5% (1)	33% (7)	57% (12)	5% (1)
	Post	-	-	14% (3)	86% (18)	-
Can handle unpleasant feelings	Pre	-	19% (4)	29% (6)	48% (10)	5% (1)
	Post	-	10% (2)	29% (6)	57% (12)	5% (1)
Have to act on a hunch	Pre	-	10% (2)	71% (15)	14% (3)	5% (1)
	Post	5% (1)	10% (2)	33% (7)	48% (10)	5% (1)
Make unpopular or difficult decisions	Pre	-	19% (4)	52% (11)	29% (6)	-
	Post	-	14% (3)	52% (11)	29% (6)	5% (1)

We asked respondents to indicate, on a 5-point scale (never, rarely, monthly, weekly and daily) how often they felt they applied the skills or training from the MedTRiM workshop. Twenty-five per cent (n=6) indicated using skills daily, 37% (n=9) weekly, 21% (n=5) monthly and 17% (n=4) rarely. This represents a downward shift to expectations displayed in the pre-training questionnaire (58% expected to use skills 'daily' and 36% weekly). It is perhaps easier to see differences for the individual where we have both pre- and post-training data (Table 12).

Table 12 Matched data: Anticipated frequency of using skills learnt

Frequency of use	Pre-training	Post-training
Daily	57% (12)	24% (5)
Weekly	38% (8)	38% (8)
Monthly	5% (1)	24% (5)
Rarely	-	14% (3)
Never	-	-

When we calculated matched data using Wilcoxon signed-rank test we can see a significant reduction post-training in the frequency participants used the skills they acquired in the workshop (z = -2.80, p < .05, r = - .60), with just over a third indicating that they would use skills 'monthly/rarely' (see Table 12). However, it should be noted that around a quarter of the sample indicated using skills on a daily basis and 38% on a weekly basis is promising.

To understand individuals level of understanding, we asked respondents to rate how well they felt they understood the concepts that were taught on the course in relation to the list of the topics that were taught (Topic 1 - understanding biological reactions to stressful/adverse events and trauma; Topic 2 - strategies to manage your responses to stress; Topic 3 - being a MedTRiM leader; Topic 4: communication and skills regarding post-traumatic event conversations/debriefs with colleagues). See Table 13.

Table 13: Respondents level of understanding in relation to topics taught in the workshop (n=22)

Statements	% (n)
I have **some significant confusions and/or blind spots**	-
I have a **basic familiarity** with the concepts	41% (9)
I have a **solid understanding** of the concepts	45% (10)
I have a **comprehensive** understanding of the concepts	14% (3)
I have an **expert-level** understanding of the concepts	-

One of the main intentions of the MedTRiM training is to teach individuals skills and strategies that they can use on the job. We asked respondents to rate how confident felt that they could competently put these skills into practice, on a five-point scale from 'I have zero confidence that I can successfully use these skills' to 'I am extremely confident that I can successfully use these skills'. See Table 14

Table 14: Ratings of confidence to successfully put skills into practise (n=24)

Statements	% (n)
I am **extremely confident** that I can successfully use these skills	-
I am **confident** that I can successfully use these skills	37% (9)
I am **partially confident** that I can successfully use these skills	54% (13)
I am **not very confident** that I can successfully use these skills	8% (2)
I have **zero confidence** that I can successfully use these skills	-

We asked participants to indicate which aspects of the MedTRiM training programme (skills, knowledge, attitudes) had been most memorable. Of the 21 who responded, many indicated a change in attitude (n=12), with five individuals citing talking with and supporting others, and others indicating skills, the gratitude diary (n=2), mental toughness guide (n=2), and mindfulness. See Table 15

Table 15: Most memorable aspects of the MedTRiM training (n=21)*

Themes	n respondents	Example
Attitudes	13	"*Having a new way of thinking and dealing with the complications inevitably work/life brings*" (pt.22.f.td) "Seeing challenges instead of fear" (pt.27.f.td)
Skills/knowledge	12	Gratitude diary; mental toughness guide; mindfulness, resilience techniques, learn something new, knowledge: "I was already doing daily gratitude but have continued this" (pt.16.f.td)
Talking with and supporting others	6	"*Sharing with others and asking for help when events occur which provoke feelings*" (pt.12.f.o) "*To be mindful of colleagues (and myself) when a serious/adverse incident happens and their (or my) reaction to it afterwards*" (pt.19.m.d)
Changing habit	2	"*I have changed by habits, including removing work emails from phone, no phones in bedroom*" (pt.27.f.td)

*some respondents provided more than one suggestion

Sixty-two per cent reported they had applied these skills to their work and interactions with colleagues. Twelve respondents provided examples of an event when they used the skill. Examples can be understood to fit into four broad themes: change in behaviour, reframing thinking in response to situations, raising concerns and supporting others (see Table 16).

Table 16 Free-text comments: Examples of events when skills were used (n=12)*

Themes	n respondents	Example
Reframing thinking	4	*"Extreme frustration with differing point of view, chose to accept differences and walk away from the situation instead of escalating"* (pt.27.f.td) *"Don't stress about things out of control like no beds available"* (pt.16.f.td)
Change in behaviour	3	*"Aim to smile more and be approachable"* (pt.26.m.td) *"Daily meditation"* (pt.25.m.d)
Supporting others	3	*"Trainee experienced a patient death and aggressive relatives, I was able to support trainee exploring feelings and encourage them to share with educational supervisor"* (pt.12.f.o) *"Trainee felt unsupported in a post and wanting to leave training"* (pt.28.f.d)
Raising concerns	2	*"Have felt empowered to talk about concerns from work with colleagues and change things"* (pt.21.f.d)

*some respondents provided more than one suggestion

Respondents (n=16) also provided free-text comments in response to challenges they had experienced in applying the skills/training learnt from the MedTRiM programme. Nearly half referenced time as a challenge, "*making time to do the skills*", others cited the team, level of insight and lack of support. Two respondents indicated no challenges were experienced. See Table 17

Table 17: Free-text comments: Challenges experienced in applying the skill/training (n=16)*

Themes	n respondents	Example
Time	7	*"Time constraints with demands of new specialty"* (pt.17.m.td)
Level of insight	4	*"significant event overload – 3 children's' deaths in a month meant that I didn't recognise in myself stress etc."* (pt.21.f.d)
Lack of support	3	*"lack of support/awareness from operational managers to recognise staff need to be supported"* (pt.20.f.n)
Team	1	*"Discussed some of the tips with MDT [multidisciplinary team] to try to use as a team"* (pt.15.f.d)

*some respondents provided more than one suggestion

Sustainability of learning is of key importance with any behaviour-based programme. Therefore, we asked participants if they would like to receive some kind of prompt, support (e.g. emails, texts, short video clips). Of the 19 responses received, the most popular mechanism was via email, with a few citing text, video clips and tweets. Five individuals provided examples of what they would like reminders of: debrief session, strategies, core principles, and an overview of new resources. See Table 18.

Table 18: Prompt preferences (n=19)*

Prompting method	N
Email	14
Text	4
Video Clips	2
Tweet	2

*some respondents provided more than one suggestion

We also asked participants to indicate any aspects of the skills/training that they would be particularly interested in learning more about. Six individuals responded and provided examples including further training on how to build personal goals into a time poor life and how to embed training in work, meditation, the stress bucket, relationships and support for the supporters.

Summary of key points:
- o A significant increase in total resilience scores were observed when we looked at matched data, with regards to scoring on the Connor-Davidson Resilience Scale; 16 increasing, one individuals stayed the same, and four individuals showed a decrease in their resilience scores. This suggests that perhaps individuals had developed a greater sense of resilience from attending the MedTRiM course.
- o Numbers of those scoring >70 'high resilience' increased from seven to 10 individuals.
- o Resilience ratings have shown a number of positive increases, particularly with regards to 'feeling in control of their life' and 'feeling able to handle unpleasant feelings'.
- o Results show a reduction in the frequency of using skills learnt, between expected use and active application of skills, however that 25% display active use on a daily basis is promising.

Post-Training Interviews

We wanted to understand the usefulness and impact of the MedTRiM training workshop in equipping individuals with the skills to manage and deliver resilience support as MedTRiM leaders to colleagues and teams they work with. Post-training telephone interviews were conducted between four and six months following MedTRiM training. Here we present a summary of themes identified from telephone interviews (n=6). Five of which were doctors, with all but one identifying as female. All but one participant held senior roles.

Telephone interviews generated two hours and 8 minutes of data. Data underwent thematic analysis.

Who would benefit most from this training?

We asked who participants felt would benefit most from this MedTRiM training. All participants agreed that all specialties and those involved with patient care should undertake some form of resilience training, "*probably the earlier you start the better*" *(m.int.11.f.o).* Particularly in terms of *"core requirements for our competencies regarding patient safety…need to obviously meet with the GMC requirements*" (mt.int.12.d.f.d).

However, when reflecting on the training received via MedTRiM, most (4/6) felt that the tailoring of the day would benefit those from registrar upwards as levels of responsibility increase:

> "*I suppose if you get people it will trickle down because they're the ones in a position to sort of make a difference*" (mt.int.16.fd)

> "*F1s [foundation year 1] are looking to someone else for that training*" (mt.int.14.m.d)

Also there was a suggestion that attendees should be of a similar level, in part due to a common recognition and understanding of different experiences in practice and also to allow for free and honest discussion that may be hindered by the inclusion of those in more junior positions:

> "*There's lots of multidisciplinary people with us, I think, sort of registrars, consultants, senior nurses makes sense. I think you are more open than if you're working with a junior, junior…Because you've got to feel a certain amount of recognition of going through stuff together, or you've been around a bit and you know the system and in some ways, I think, you wouldn't want to say stuff perhaps about how tough it was because they're all juniors, it might be a bit much for some.*" (mt.int.15.f.d)

This aspect of relatability to the content of the scenarios and level of discussion was echoed from the perspective of the only doctor in training interviewee:

> "*Some of the exercises that we did, so the trimming bit, talking about events and things realistic, may be I've been lucky but I can't envisage doing that for the next few years and I haven't had to really do that with any of my colleagues or any of my friends*" (mt.int.13.f.td)

What do participants learn?

Knowledge/skills

All participants stated they acquired new knowledge as a result of the MedTRiM training they experienced. Examples provided included "*interesting facts and new sort of tips about managing wellbeing and resilience*" (mt.int.11.f.o), debriefing and nutrition:

> "*It was pretty practical and realistic you know, the deep breathing*" (mt.int.15.f.d)

> "*I thought the workshop on debriefing was really good…so I thought it was really good, it gave you a structured way of doing it*" (mt.int.12.f.d)

Awareness

A much valued and memorable aspect of the training was that of awareness, and was articulated by all interviewees. Awareness was categorised in terms of the realisation from interviewees in regards to physiological responses to stress,

> "like analysing situations and thinking why you're feeling like things because you're post nights or something and then you look at things differently at the time" (mt.int.13.f.td)

> "*The thing is looking back on that the things I think that did break me, which I'd not quire realised, is at that point I was three months into my six months grace period, and I hadn't known what job to go to at the beginning of August, and I don't think I quite realised how that would…I didn't realise how unhappy with that uncertainty I was*" (mt.int.16.f.d)

and thinking more in terms of the working environment and the team:

> "*I think there were some quite good key messages…one of them was that the NHS is very [tough], but you can survive it and to some extent, it's up to you how you do that because there are mechanisms to do that by.*" (mt.int.15.f.d)

> "*Whether or not that's the job you're doing, awareness of your colleagues or awareness of your own limitations I think it's really important that we ought to focus on that a bit more*" (mt.int.12.f.d)

Awareness raising was engendered through both the human factors aspect, group discussion and the scenarios given in training.

Impact of training

Interviewees discussed how the training impacted on them as individuals and their behaviour.

An interviewee describes a difficult situation involving a patient and family and how they felt able to handle it differently after the training:

> "*I just said to management that I'm not going to see her, I'm sorry. You'll have to sort this out and I'm sure it was because of the resilience training that I felt I was enabled to do that...the manager wasn't very impressed because he didn't want the hassle, but it did put a red line under the situation actually, so that was quite useful to do.*" (mt.int.15.f.d)

One individual spoke about transitioning to another job and what they would like to do once there:

> "*What I would like if and when I get the job is actually have a dedicated team…identify areas that need to be worked on and think of ways of doing it.*" (mt.int.12.f.d)

Interviewees were asked about whether they thought this training could potentially reduce medical errors. One interviewee spoke of the ability to be able to cope, thus increasing focus:

> "*I think it probably makes you a bit more focused, you've got may be a particular task you've got one goal and you're just solely focused on that. But you can cope, because you can cope with all the other things you've got ways of dealing with other things, like stress and things*" (mt.int.12.f.d)

However, other interviewees (4/6) were more reticent about a causal relationship between this training and reduction in errors:

> "*You know it's so intertwined with who we select for medical schools, societal changes in expectations of young people, it's not one single factor. I certainly think we must do everything we can to help people look after themselves*" (mt.int.11.f.o)

> "*Potentially…when people are not aware of their own triggers for stress and anxiety I don't think they perform optimally and I think they are more prone to errors*" (mt.int.14.m.d)

Barriers

Interviewees did mention barriers to engaging in activities learnt. One person mentioned that after they had attended the workshop they had experienced challenging and difficult patient/family encounters, "*very aggressive, difficult patient group and they've really laid into a number of consultants*" (mt.int.15.f.d) and lack of support from seniors hampered being able to communicate effectively.

While another spoke about the role of the organisation being a barrier or facilitator to engagement in effective post-trauma communications:

> "*I think the fact than an organisation, employers need to step in early to facilitate people talking about when they've experienced traumatic events. And it's not a question of always leaving it to the individual, that one needs to recognise that when these events occur there needs to be a formal response to offer support if people want it*" (mt.int.11.f.o)

Another interviewee spoke of the complexity of teams within specialties, where the type of patient event would dictate the complexion of the team at a particular time (neo-natal, medical, nurses, obstetrics, respiratory, cardiology, neurology, ENT, surgical, nurses, chaplaincy, dietitians, outreach) and the practical difficulty of getting those individuals back together for a debrief:

"I think the difficulty we have as well is because of shifts sometimes it actually, the event happens but then it's difficult to get that set of the team back into the unit at the same time to do one debriefing…or the event will occur over 2 shifts, so you may decide to re-orientate care, but the baby doesn't actually pass away until well into the next shift. So effectively 2 teams are then involved and that's really difficult too." (mt.int.12.f.d)

Summary of key points:
- Interviewees felt training should be delivered across disciplines/specialities.
- Interviewees thought that MedTRiM training content was most beneficial to grades above registrar.
- Training raised awareness and interviewees took away skills that benefited their own appraisal and response to situations.
- Training empowered an individual to prioritise self-care in a challenging situation with the workplace.
- Debriefing was more difficult in specialties where teams were more changeable.
- Organisational culture and workload are problematic with regard to engagement and implementation.
- Greatest benefit of training appears to be for the individuals themselves. There were few examples of interviewees using or cascading skills with others.

Evaluation limitations

This evaluation was not without its limitations. The intention was for this evaluation to explore the effectiveness of the MedTRiM training programme with allied health professionals. However, numbers of different health professionals attending the workshops within the study period were very few, despite efforts to advertise the event using various internal and external networks. In addition, the post-training questionnaire achieved a small response rate, thereby making comparisons difficult. Results should therefore be interpreted with a level of caution. Many of those who participated in the telephone interviews were associated with Dr Stacey or had previous experience of training with a couple experiencing a resilience taster day.

Notwithstanding these limitations, it remains that this study provides a valuable insight into the training needs, support and implementation of resilience training for health professionals.

Recommendations

There are a number of recommendations from this evaluation.

- o There needs to be a consistent and standardised approach to delivering MedTRiM. Some respondents, and a couple of those interviewed, were at an event where the 'human factor' element of training was delivered in the afternoon; the flow of the training workshop was felt to be disjointed as a result.
- o While talk of ongoing MedTRiM-like work in other areas (law, police) was seen as interesting these were also seen as a distraction from the medical context. Use of examples need to be meaningful and related to medicine.
- o Training was thought to be most appropriate for those from registrar upwards, and those of comparable status across the disciplines. More senior positions carried greater levels of clinical/service responsibility and traumatic experiences reflective of examples provided in the workshop.
- o Findings show MedTRiM provided significant personal benefit to individuals, however evidence that it produces MedTRiM leaders is patchy. Development of MedTRiM leaders/champions, ensuring the cascading of information (coping, stress management strategies, TRiM debriefing sessions) could be achieved by running MedTRiM training with existing multidisciplinary teams.
- o Continued support could be provided through a variety of media and platforms, some of which could sit within and build on that already provided by the Wales Deanery.

Conclusion

Those attending the MedTRiM workshop recognised the need to make a change. They recognised the need to enhance management of stressful and traumatic situations, wanting to improve their resilience and learn skills in their management of stressful situations, increase confidence and the ability to identify risk, educate and provide support to others to improve resilience and awareness. While the MedTRiM training programme has provided significant personal benefit to individuals it does not appear to have led to the development of champions or leaders (those who would cascade training) as intended. Training for those in healthcare needs to be pitched at levels that

are commensurate with roles and experience so as to meaningfully engage multidisciplinary teams. The MedTRiM training programme has been shown to be context relevant and evidenced through examples as an approach that has been beneficial and improved the health and wellbeing of those at the frontline of care.

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