

E-HEALTH

Health Psychology
PSYC706

26 July 2021

The topic of today's class

- eTherapy for common psychological problems
- By *common psychological problems*, I mean: depression, anxiety, and stress.

Depression symptoms include:

- Lowered mood or loss of interest or pleasure in daily activities
- Weight change or change in appetite
- Change in sleep (insomnia or hypersomnia)
- Fatigue or loss of energy
- Feelings of guilt or worthlessness
- Impaired concentration skills
- Suicidal thoughts
- (bereavement exclusion as grief might even be protective)

Anxiety symptoms include:

- Excessive, uncontrollable, and often irrational worry.
- Moderate correlation with depression.
- Can interfere with daily functioning: fatigue, fidgeting, breathlessness, difficulty concentrating, irritability, restlessness.
- Includes phobias, social anxiety, panic attacks, generalized anxiety disorder, separation anxiety

Stress symptoms include:

- Long-term state of reacting to complex environmental demands.
- Physical symptoms can include: low energy, insomnia, lowered immune system (frequent colds), upset stomach and headaches
- Long-term stress leads to **burnout**: state of exhaustion, characterized by feelings of disillusionment and helplessness. Loss of interest and motivation, irritability, feeling overwhelmed and resentful.

Acute Stress Disorder symptoms include:

- In response to a traumatic event.
- Reduced emotional responsiveness, awareness of surrounding, recurrent images, thoughts, flashbacks, reliving the experience.
- Avoidance of stimuli associated with trauma.

Some alarming statistics

- Around 10% of people in Western countries currently experience some form of depression or anxiety.
- By age 19, a quarter of people will have experienced a depressive disorder (Lewinsohn et al., 1998).
- These statistics are not too different in other cultures, e.g. in South Korea: 2.5% of the population have **major depression**.
- Korea's suicide rate doubled from 1997 to 2007 and is now the highest in OECD countries.
- This is global problem, with high social and economic costs.

Health literacy

- With easy access to information via the Internet, people experiencing health problems are now much more informed than before.
- Many people search for a prior self-diagnosis online.
- This may sometimes be dangerous if it leads to misdiagnosis.
- Health professionals (including psychologists) need to be aware of this.

Barriers to seeking help

Not many people receive help. For example, some statistics show that only around 20% of young people receive help for their psychological problems. Some of the reasons include:

- Access problems (e.g. living in rural area)
- Perceived stigma to seeking help (especially for older people)
- Lack of available psychologists
- Long delays and waitlist
- Cost

The role of technology

Can technology help overcome these barriers?

Does eTherapy fit in more with modern lifestyle or the generation of “digital natives”?

Self-help is already happening

- The traditional way has been self-help books, but this is increasingly shifting to electronic formats.
- There are now more than 1 million smartphone or tablet apps available for download in the Apple AppStore and the Google Android system.
- These include various wellness apps, for both physical and psychological wellbeing.
- There are more than 5,000 health and fitness apps for smartphones.



Examples of self-help wellness apps



Moodtrack Diary: Private Mood Tracker & Mood Tracking Journal

Graph your moods on the fly. Privately track as little or as often as you want (mood-swings? no problem!), whenever you want (at home, on the go, and even without Internet!), and look back to see your moods over weeks, months, and years to learn about yourself and live better!

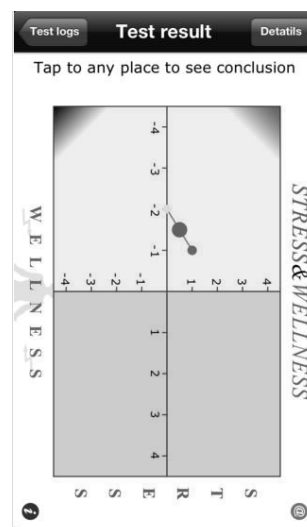


Examples of self-help wellness apps



Stress&Wellness

Stress & Wellness Assessment based on Heart Rate Variability analysis during two different protocols. First protocol compares analysis during Normal Breathing with that during Deep Breathing to find out the most possible levels of Adrenals and Wellness as well as its capacity.



Examples of self-help wellness apps



Gratitude Journal

As it says, Gratitude is the mother of all virtues. Try write down the little things you are grateful for your day in this lovely journal. It will change your attitude towards life.



How effective is self-help?

- The answer is: "We don't know".
- Because we don't know who starts such programmes and what their situation was like before and after.
- Evidence from book-based therapies show that less than 50% of people finish a self-help program that they have started.
- Unless psychologists engage with eTherapy themselves more, there could be some apps around that cause more damage than do good.



What is eTherapy?

- Psychological therapy that clients complete under the supervision and guidance of a psychologist.
- The level of support and guidance can be very minimal (via emails, SMS, or phone call).



- Compared to face-to-face therapy (45-60 min per week), psychologist's time is reduced to around 5-20 min per week.

Computerised CBT (CCBT)

- **Cognitive-Behavior Therapy (CBT)** is a popular and effective therapeutic approach for treating depression and anxiety.
- Its structured approach to therapy and exercises makes it very suitable for use as eTherapy.
- Only mild cases should use **computerised CBT (CCBT)** – urgent cases (e.g. suicide danger) need to receive urgent face-to-face help.

“Beating the Blues”



- Patients see a doctor who might then recommend this programme.
- Patients complete this programme independently online, but occasionally have a consultation session with an assistant psychologist.
- http://www.beatingtheblues.co.nz/uploads/BeatingBlues/flash/BtB_Patient_Video.mp4



“Beating the Blues”

The program typically follows this structure:

- 15min introductory video then eight 1-hour sessions to promote helpful thinking styles.
- Clients complete weekly homework, and regular progress reports are given to facilitator and client.
- Other programs include: MoodGYM, Colour Your Life, Managing Your Mood, Overcoming Depression.

“Managing Your Mood”

Lesson	Time before next lesson made available	Primary content Lessons and summaries	Secondary content Additional resources
Lesson 1	1 week	Education about the prevalence, symptoms and treatment of depression and anxiety, including an explanation of the functional relationship between symptoms. Vignettes describing impact of symptoms. Normalising difficulties during recovery.	Improving sleep Frequently asked questions
Lesson 2	1 week	Instructions about controlling physical symptoms of depression and anxiety, including symptoms of hyper-arousal and hypo-arousal. Provided de-arousal strategies and scheduling activities.	Communication skills Assertiveness and healthy boundaries Advanced information about panic attacks Frequently asked questions
Lesson 3	2 weeks	Basic principles of cognitive therapy, including strategies for monitoring and challenging thoughts.	Structured problem solving Worry time Attention control Frequently asked questions
Lesson 4	2 weeks	Education and guidelines about behavioural activation. Education about guidelines about practising graded exposure.	Core beliefs Acting as if 100 pleasant things to do Frequently asked questions
Lesson 5	2 weeks	Information about relapse prevention and constructing relapse prevention plans.	Frequently asked questions

Examples of CBT exercises

Date and Time

8/13/2012 02:45 PM

Situation

Please describe what was going on at the time you had the feelings and automatic thoughts you will include in this record.

Laying down in bed in the middle of the day

Emotions

Please record what you were feeling by choosing one or more words to describe the emotions you had at the time from the list below.

Angry 100% Annoyed Anxious
 Ashamed Bored Depressed 95%
 Disappointed Down Embarrassed
 Frustrated Guilty Humiliated Hurt
 Irritated Jealous Lonely Sad Tense

If you don't see the right word to describe your emotions in the list, enter it on the blank space at the bottom to add it to the list.

Enter Your Own

Thoughts

Please enter in a separate box each thought that entered your mind at the time.

I should not have lost that job 100%
 I let them treat me like garbage 90%
 I am a loser 95%
 At my age I'll never find another job 90%
 Enter thought

www.cbt-examples.com

Examples of CBT exercises

Challenge a Thought

Thought to be Challenged: I am a loser

1. Supporting Evidence:

Please describe all evidence (facts, observations) **supporting** the thought being challenged.

I lost my job

Right now I don't have an income to support my family

I have saved so little that in a few years I'll be a burden to my sons

2. Evidence Against Statement:

Please describe all evidence (facts, observations) **against** the thought being challenged.

I was able to support my family for many years

I've been a decent father and husband

I was respected at work until that last boss came around

www.cbt-examples.com

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3. Balanced Thought:

Please generate a more balanced statement to replace the automatic negative thought being challenged.

I've had some success in life, some mistakes. Right now I'm going through a rough moment, but it's up to me to make the most of it

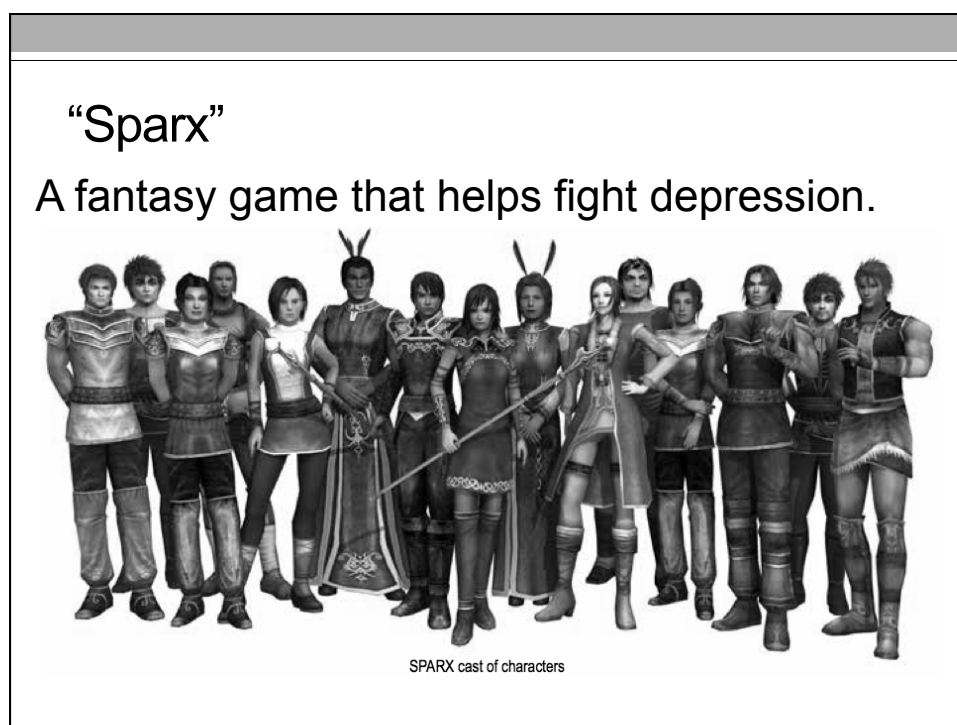
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4. Re-rate Certainty:

Please rate how accurate you now think the thought being challenged is.



Initial Certainty of	I am a loser	95%
New Certainty of	I am a loser	30%



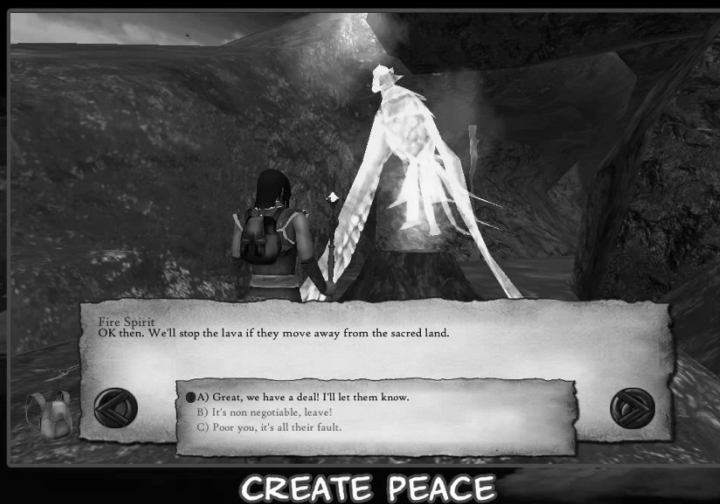
“Sparx”

- For adolescents experiencing mild to moderate depression.
- Uses a 3-D fantasy gaming environment to deliver Cognitive-Behavioral Therapy.
- User interacts with a character who provides psychoeducation, assesses mood, sets real-life challenges (e.g. homework tasks).
- User chooses a character to restore balance in the world infested by GNATs (gloomy, negative, automatic thoughts)
- Uses problem solving, relaxation, identify negative thinking, cognitive restructuring etc

“Sparx”



“Sparx”



“Sparx”

Order of lessons:

Level 1—cave province: finding hope

Psychoeducation about depression and an introduction to the cognitive behavioural therapy model
 Introducing GNATs (Gloomy Negative Automatic Thoughts)
 Introducing “hope” (people recover from depression)
 Relaxation: controlled breathing

Level 2—ice province: being active

Activity scheduling and behavioural activation
 Relaxation: progressive muscle relaxation
 Basic communication and interpersonal skills

Level 3—volcano province: dealing with emotions

Dealing with strong emotions: anger and hurt feelings
 Interpersonal skills: assertiveness, listening, and negotiation

Level 4—mountain province: overcoming problems

Problem solving using STEPS: Say the problem, Think of solutions, Examine the pros and cons, Pick one and try it, See what happens
 Cognitive restructuring-identifying SPARX: Smart, Positive, Active, Realistic, X-factor thoughts

“Sparx”

Order of lessons:

Level 4—mountain province: overcoming problems

Problem solving using STEPS: Say the problem, Think of solutions, Examine the pros and cons, Pick one and try it, See what happens

Cognitive restructuring-identifying SPARX: Smart, Positive, Active, Realistic, X-factor thoughts

Level 5—swamp province: recognising unhelpful thoughts

Cognitive restructuring—recognising different types of GNATS

Level 6—bridgeland province: challenging unhelpful thoughts

Cognitive restructuring—learning to challenge or “swap” negative thoughts for helpful ones

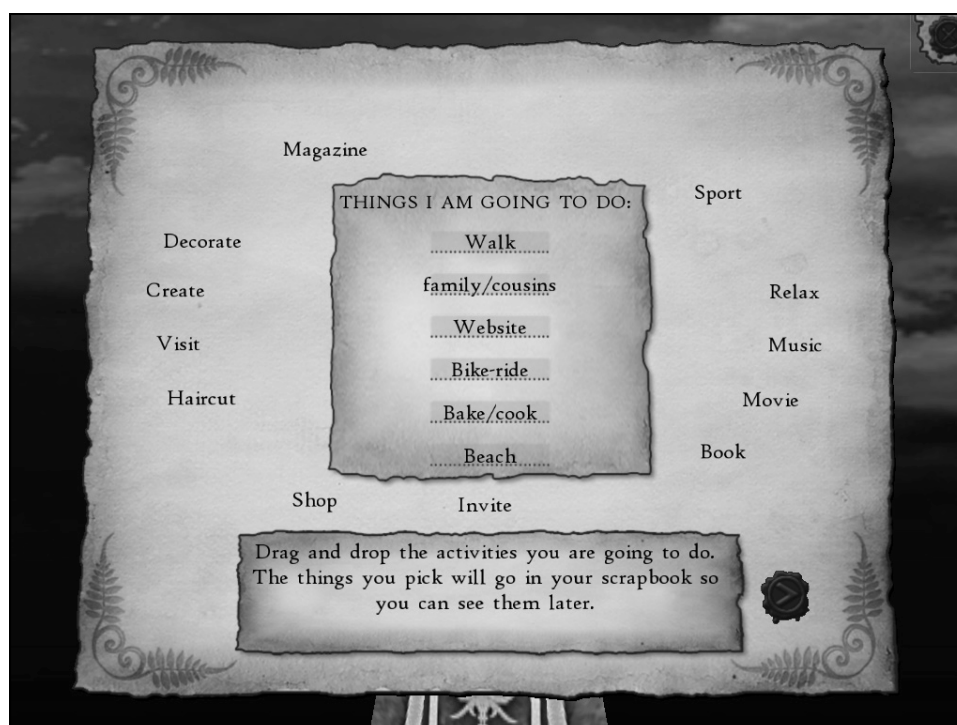
Interpersonal skills continued: negotiation skills

Level 7—canyon province: bringing it altogether

Recap of all skills

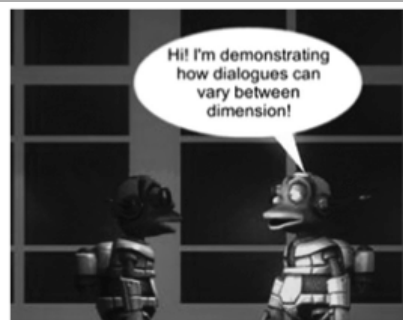
Mindfulness: tolerating distress

Relapse prevention: knowing when to ask for help



“Serious Games”

- “...the use of digital gaming technology to address a specific set of learning objectives or behavioral goals” (Schuller et al., 2013, p.48).
- Apart from use with autism, it is not so much used for serious psychological problems, but more for psychoeducation.
- Example is www.maseltov.eu to promote integration and cultural diversity:



(a)



<http://www.computer.org/pervasive>

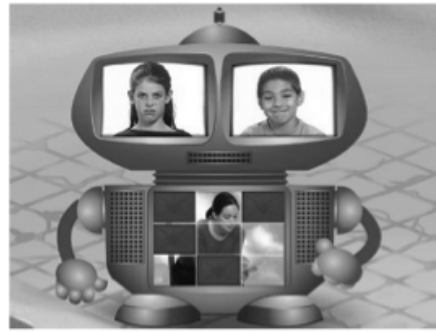


(b)





(a)



(b)

- Or to teach emotion and face recognition for autism

Is eTherapy working?

- Many reviews have confirmed that eTherapy is just as effective as “treatment as usual”, which means a lot of money can be saved by using eTherapy.
- However, there are some methodological difficulties when testing the effectiveness of eTherapy (e.g., what is an appropriate control group?).
- So, the conclusion is that eTherapy **appears** to be as effective as other types of therapy.
- More effective for depression, anxiety, eating disorders, cannabis use, gambling, and a little less for chronic pain or fatigue.
- But booster sessions may be required.

Commonly cited benefits of e-Therapy	Commonly cited criticisms of e-Therapy
• Patients can access it at their convenience • Available 24/7 in the privacy and comfort of one's home without the need to travel or make an appointment • Patients can work at their own pace – weekly appointments may not suit everyone • It suits those who are concerned about privacy or stigma or are reluctant to engage in traditional face-to-face therapy • It can provide treatment to those who live in geographically isolated areas, otherwise inaccessible	• Inability to deal with complex interpersonal problems, to respond to non-verbal cues or build rapport (Murphy, 2003). • As technology use increases, people's need for real face-to-face interaction may actually increase, making them reluctant to seek help from yet another machine (Murphy, 2003) • Evidence is limited to a number of select programs • The Internet is a reservoir of misinformation (vaccination is a case in point) and poor quality programs. There are calls to establish a set of guidelines to regulate e-Therapy to prevent ineffective programs • Less access to the technology by those from lower socio-economic groups and minorities may propagate, instead of diminish, inequalities in access to treatment • Computer use may be contributing to the very mental health problems computerised therapy is trying to treat (e.g., young people using computers at the expense of forming 'real' relationships)
Stasiak & Merry (2013)	

Level of support

- eTherapy is more effective if there is higher level of support for patients.
- A certain minimum level of support is necessary to keep patients engaged and motivated to finish the homework tasks.
- There is some concern that meaningful relationships between patient and therapist cannot be established online, but this may not be such a problem (at least for therapies for mild psychological problems).

Do patients like eTherapy?

- Only about 40% of patients use eTherapy when offered, and then, only around 50% of people finish eTherapy.
- More people finish eTherapy if they receive guidance and support from a therapist.
- But once people have started, they tend to like eTherapy.
- The most common reasons for discontinuing eTherapy are: lack of time, too demanding, preferring face-to-face contact.
- But people often like the flexibility and anonymity.

eTherapy: Current challenges

- Technical issues (e.g. battery life, Internet access)
- Privacy concerns
- Ethical issues (location of service and liability insurance)
- Making eTherapy attractive for more people
- Is it better as an add-on to therapy? In other words, to support face-to-face therapy?

Examples of powerful add-ons

Assistance with life skills:

- Giving prompts to people with autism for social situations.
- Or help with name and face recognition for people with prosopagnosia or dementia.



Mintz et al. (2012)

The future: Advantages of eTherapy

- Our lifestyles are changing with technology. Therapy needs to change with it
- Being a psychologist is sometimes likened to being a coach: You teach your client skills, but they have to apply it themselves.
- But unlike a sports coach, the psychologist is usually not there when the client needs to deal with the problems.

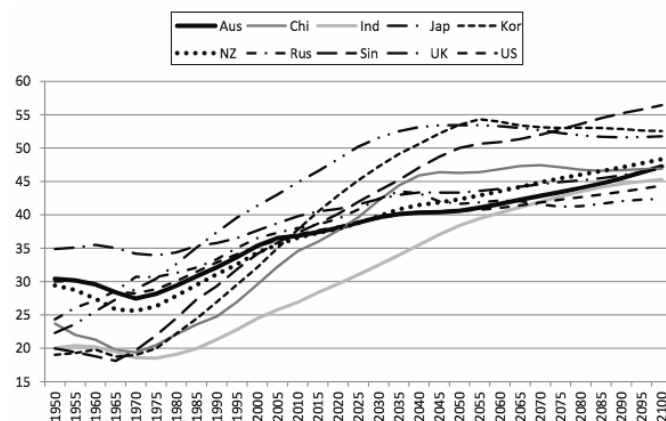


The future: Advantages of eTherapy

- Using eTherapy means any data we are collecting are likely to be more accurate.
- For example, patients often complete diaries and homework last minute and not when they are supposed to. Now the psychologist can find out!
- Speech pattern recognition
- Intelligent reminding
- More multidisciplinary therapy (e.g. combined with physical exercise, nutrition intervention)
- Robots

The need to focus on prevention

With an increased ageing population, there will be fewer health professionals in the workforce per capita:



Kowal et al. (2014)

Online MBIs

- Spijkerman et al. (2016) reviewed 15 online MBIs (8 MBSR, 2 MBCT, 5 ACT)
- Delivered usually through a website
- Varying degrees of guidance was provided (e.g. individual email coaching or online message boards)
- Small but significant effect size for anxiety, depression, and stress
- Thus, lower effect size than traditional MBIs
- High drop-off rate noted

Present Study

- Trial a webinar approach to deliver a group-based MBI with university students and staff
- Thus not straying away too far from the traditional MBI group format
- First introductory session with the facilitator present in person and afterwards joining via videoconferencing
- Measure mindfulness and psychological distress through self-report

Main Facilitators



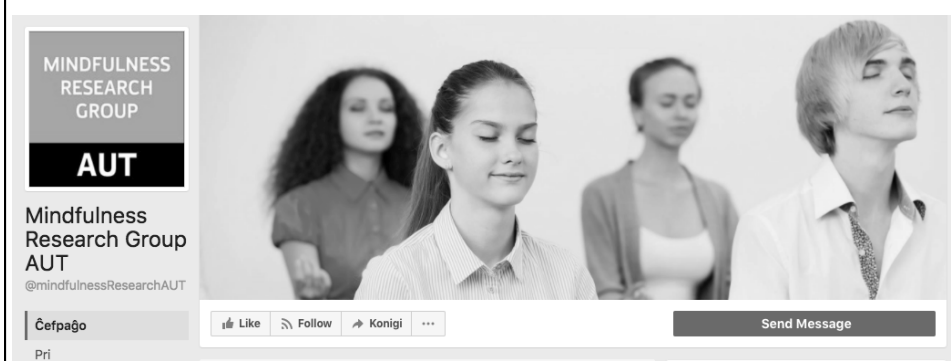
- Grant Rix
- Natasha Rix facilitated the intervention with caregivers

Anticipated Challenges

- Problems with Internet connection or audio-visual technology
- Attrition (drop-out) may remain a concern
- Group therapy has been linked to lower effect sizes than individual formats (0.38 vs 0.50)
- Despite the initial face-to-face session, individual may still not have sufficient rapport with facilitator
- Other researchers were present to prepare the room and interact with the software
- A clinical psychologist was present to assist participants with adverse effects

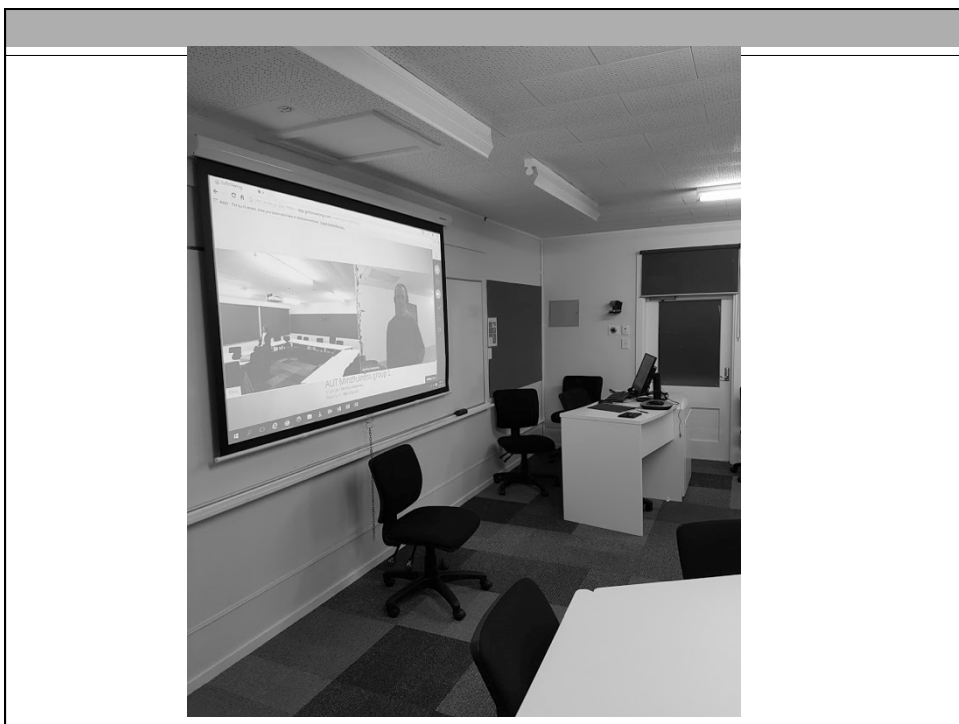
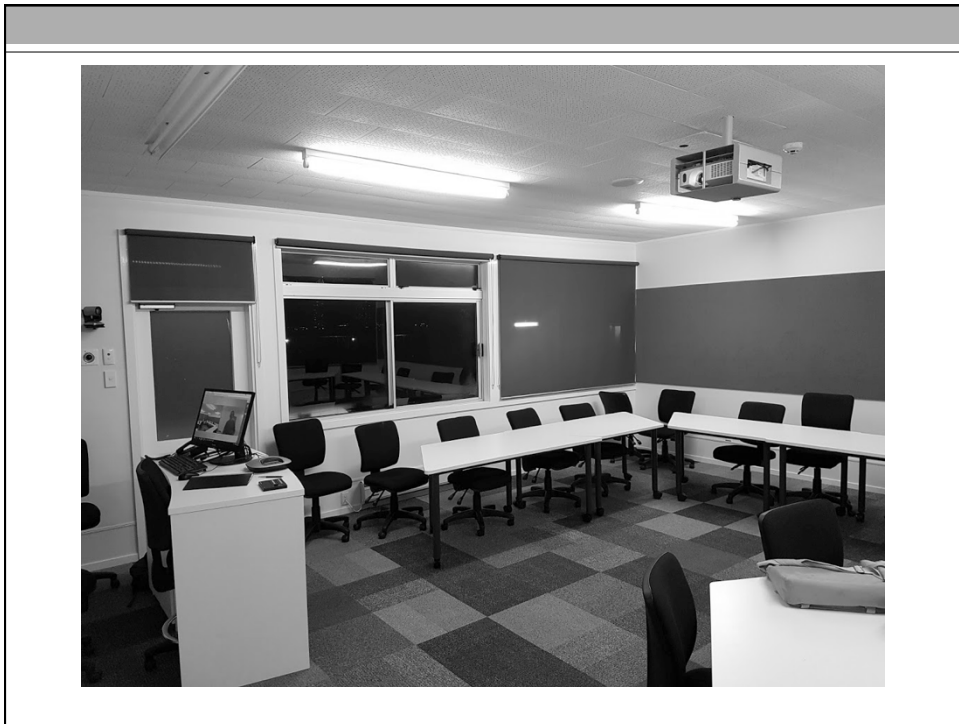
Recruitment

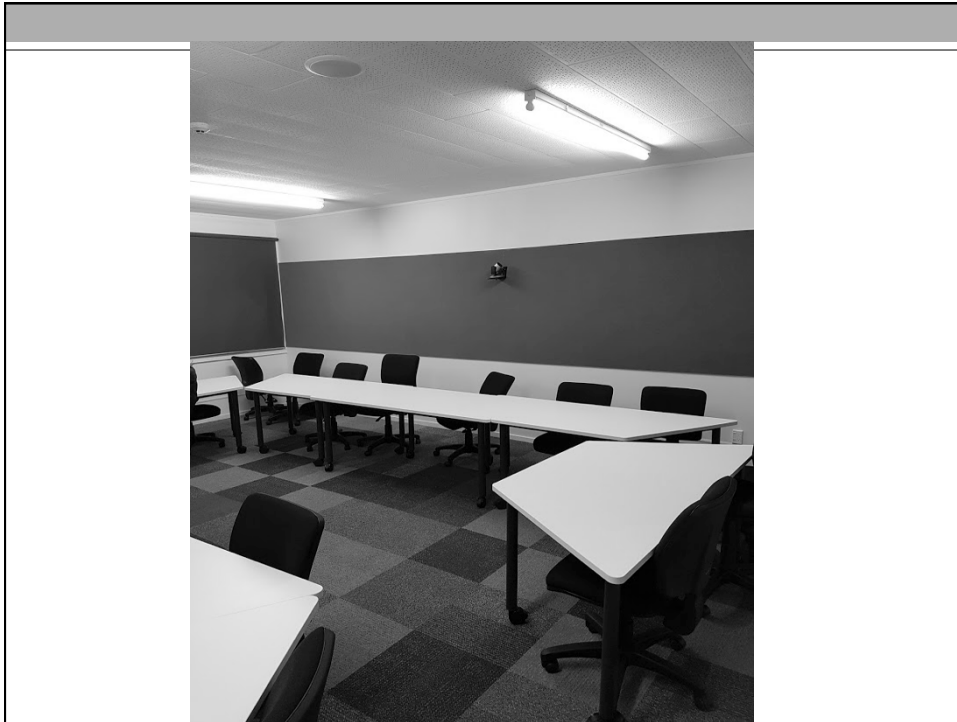
- Advertisements to students and staff through posters, emails, or Facebook pages as well as presentations in lectures



Setting

- Refurbished classrooms at North Shore Campus of Auckland University of Technology
- Sessions were conducted between 17:00-19:00h to minimize noise disturbance from nearby
- Sessions ran for 6 weeks during winter to early spring
- Usually one researcher and one clinical psychologist were also present
- They helped set up the room (e.g., remove tables from the center, heat the room 30min before start of session, test equipment)





Videoconferencing



- Using the commercially available software GoToMeeting.
- Allows real-time audiovisual interaction
- The researcher received an invite, which allowed them to connect to the remote session.
- View could be switched between two cameras and zoomed in and out
- PowerPoint presentation could also be shared
- After each session, one of the researchers forwarded additional material (such as links to videos) to the participants for additional exercises

Session 1

- This occurred face to face
- Classroom tables were moved to the side and chairs arranged in a circle
- An ice breaker introduction game was played
- The also facilitator introduced himself, his background, and experience
- The purpose of the course was outlined
- Researchers were introduced
- Researchers participated in all exercises just like any other participants

Session 1

- The facilitator explained mindfulness in his own words
- The facilitator explained the role of posture when sitting
- The facilitator brought cushions and gave the option for participants to try them while explaining posture
- The session finished with a 10-min meditation exercise
- Home practice included:
- www.youtube.com/watch?v=AfWK6hvUjEg
- Also loving kindness

Session 2

- First session delivered via webinar
- Brief introduction and familiarization with the technology by everybody incl. participants
- Then same breathing meditation exercise for 10 to 15 min as at the end of the previous session
- Then physical movement exercise similar to Taijichuan
- Slideshow presentation on mindfulness and the brain
- Mindful eating exercise
- Home practice: body scan

Session 3

- Guided breathing meditation
- Physical movement meditation exercise
- Slideshow presentation on types of awareness, negative bias, and walking meditation (also home practice)

Common narratives (when learning meditation)

- I can't just sit here and do nothing
 - I shouldn't be feeling this way
- "...although the brain can think that, the panic gland never believes it"*
- Terry Pratchett, *Darwin's Watch*



Session 4

- Guided breathing meditation
- Physical movement meditation exercise
- Slideshow presentation on types of awareness, negative bias, and walking meditation
- 45-min talk about foundations of mindfulness and emotions
- “Urge surfing”
- Final meditation exercise focusing on observing sound, body, and emotions
- Home practice: Insight meditation

Session 5

- Guided breathing meditation
- Physical movement meditation exercise
- Slideshow presentation on accepting and emotion regulation

Mindful Qualities (as intentional practice)

Noticing/witnessing	Receptive listening
Non-judgement	Curiosity
Accepting	Kindness
Non-clinging (letting go)	Compassion
Non-striving	Generosity
Patience	Connection

Session 6

- Guided breathing meditation
- Physical movement meditation exercise
- Slideshow presentation on four foundations of mindfulness and its purpose.
- Also discussed loving-kindness meditation
- Like all sessions, ended with Q&A (although longer here in this final session)

Home Learning

1. Breathing meditation in the morning
2. Loving-kindness in the evening
3. Two-types of happiness activity
4. Explore a personal area of interest

Outcome Measures

- Reported here are some results from pre- and post-intervention measures
- Five-Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006)
- 39 items (on 5-point Likert scale of 1 = “Never or very rarely true” to 5 = “Very often or always true”)
- Items are grouped into five sub-scales

Outcome Measures

- **Observe**
 - e.g., “I sense my body, whether eating, cooking, cleaning, or talking”
- **Act**
 - e.g., “I find it difficult to stay focused on what’s happening in the present”
- **Nonjudge**
 - e.g., “I criticize myself for having irrational or inappropriate emotions”
- **Describe**
 - e.g., “I’m good at finding words to describe my feelings”
- **Nonreact**
 - e.g., “I perceive my feelings and emotions without having to react to them”

Beck's Depression Inventory II

- 21 items where each item presents four statements from which the respondent needs to select one option
- The four statements are scored 0, 1, 2, or 3
- A higher score reflects greater degree of depression
- e.g.,

0	I do not feel sad.
1	I feel sad
2	I am sad all the time and I can't snap out of it.
3	I am so sad and unhappy that I can't stand it.

Beck's Anxiety Inventory

- Also 21 items scored in the same way

Beck Anxiety Inventory (BAI)

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not At All	Mildly but it didn't bother me much	Moderately - it wasn't pleasant at times	Severely – it bothered me a lot
Numbness or tingling	☐	☐	☐	☐
Feeling hot	☐	☐	☐	☐
Wobbliness in legs	☐	☐	☐	☐

Results

Table 4 Means (*M*) and standard deviations (*SD*) for each of the outcomes measures, presented separately for the full sample of participants with Pre1 and Post1 scores (*n* = 22), those who only attended three or four sessions of the mindfulness program (*n* = 7) and those who attended five or six sessions (*n* = 15). Cohen's *d* effect sizes refer to Pre1-to-Post1 comparisons

Outcome measure	Pre1 all (<i>n</i> = 22)	Post1 all (<i>n</i> = 22)		Pre1 for 3 or 4 sess. (<i>n</i> = 7)	Post1 for 3 or 4 sess. (<i>n</i> = 7)		Pre1 for 5 or 6 sess. (<i>n</i> = 15)	Post1 for 5 or 6 sess. (<i>n</i> = 15)	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>d</i>	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>d</i>	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>d</i>
BDI	11.64 (9.46)	6.00 (4.93)	-0.75**	7.14 (4.88)	4.71 (4.96)	-0.49	13.73 (10.46)	6.60 (4.97)	-0.87**
BAI	8.59 (6.77)	7.55 (7.01)	-0.15	5.57 (2.99)	7.71 (9.29)	0.31	10.00 (7.63)	7.47 (6.06)	-0.37*
DAS	24.32 (5.12)	26.00 (3.92)	0.37*	25.00 (2.77)	26.00 (2.83)	0.36	24.00 (5.98)	26.00 (4.47)	0.38*
PTQ	31.77 (14.40)	26.41 (8.20)	-0.46*	28.86 (15.36)	23.86 (5.58)	-0.43	33.13 (14.27)	27.60 (9.09)	-0.46*
PA	33.59 (8.80)	33.45 (8.77)	-0.02	37.43 (7.28)	33.14 (8.36)	-0.55	31.80 (9.09)	33.60 (9.23)	0.20
NA	22.86 (8.43)	18.64 (5.64)	-0.59*	21.14 (6.31)	19.00 (6.30)	-0.34	23.67 (9.34)	18.47 (5.53)	-0.68*
SCS	31.18 (9.45)	37.41 (7.70)	0.72**	34.71 (7.46)	37.57 (4.83)	0.46	29.53 (10.04)	37.33 (8.88)	0.82**
CS	94.82 (11.24)	95.95 (14.20)	0.09	87.71 (13.05)	82.57 (12.25)	-0.41	98.13 (8.91)	102.20 (10.34)	0.42
FFMQ total	112.78 (7.80)	116.71 (5.75)	0.57**	113.55 (7.74)	113.47 (2.64)	-0.01	112.43 (8.07)	118.22 (6.25)	0.80**
FFMQ act	24.58 (3.23)	26.15 (3.06)	0.50	25.04 (1.95)	24.85 (3.21)	-0.07	24.36 (3.73)	26.75 (2.91)	0.71**
FFMQ describe	21.14 (5.23)	22.08 (3.36)	0.21	22.71 (3.03)	22.38 (2.80)	-0.11	20.41 (5.95)	21.95 (3.67)	0.31
FFMQ nonjudge	25.12 (5.27)	27.56 (5.30)	0.46*	25.28 (7.22)	25.78 (2.89)	0.09	25.05 (4.39)	28.39 (6.02)	0.63*
FFMQ nonreact	16.60 (3.29)	17.27 (2.47)	0.23	17.90 (3.16)	17.51 (2.23)	-0.14	15.99 (3.27)	17.16 (2.64)	0.39*
FFMQ observe	24.64 (2.90)	25.34 (2.84)	0.24	23.20 (3.17)	23.04 (3.30)	-0.05	25.31 (2.60)	26.41 (1.87)	0.49

Course attendance

Table 1: Meditation course attendance by session, shown separately for each group.

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Group 1	15	14	12	6	7	10
Group 2	15	15	12	9	9	13

- Not unlike attrition reported in other eTherapy studies

Do patients like eTherapy?

- Only about 40% of patients use eTherapy when offered, and then, only around 50% of people finish eTherapy.
- More people finish eTherapy if they receive guidance and support from a therapist.
- But once people have started, they tend to like eTherapy.
- The most common reasons for discontinuing eTherapy are: lack of time, too demanding, preferring face-to-face contact.
- But people often like the flexibility and anonymity.

Other Observations in Our Study

- Participant feedback indicated no major problems with delivery format
- May have been slightly less willing to ask questions (facilitator noted fewer questions than usually expected)
- One session had technical problems delaying start of session by 15 min
- Therefore still requires presence of a researcher
- But also shows that effectiveness might not be compromised if guest speaker or mentor is not in physical proximity

References

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