An evaluation of a single session behavioral activation intervention to improve wellbeing and prevent depression

Masters of Psychology (Clinical)

Dissertation Proposal

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Major Depressive Disorder (MDD) is characterised by a persistent depressed state, a loss of interest or pleasure in daily activities, and disturbances to other aspects of functioning such as sleep, appetite and concentration (American Psychiatric Association, 2000). Sufferers of depression are reported to have an increased risk of early mortality, interpersonal difficulties, family dysfunction, as well as difficulties maintaining employment (Lépine & Briley, 2011). According to projections by the World Health Organisation, MDD is estimated to be the lead cause of disease burden by 2030 (Lépine & Briley, 2011). At present, clinical research and practices tend to focus on developing treatment for psychological pathology, such as for MDD. However, given the costs and burden associated with depression, it seems pertinent to also focus on the development of preventative treatment measures that improve happiness and wellbeing as an important step towards improving and sustaining long-term community health. There is evidence that MDD can be prevented and that existing clinical treatment options for depression may offer useful tools in developing such preventative interventions. (Muñoz, Beardslee, & Leykin, 2012).

Behavioral based interventions for depression are well established, efficacious approaches for treating depressed clients (Mazzucchelli, Kane, & Rees, 2009). According to behavioral models, depression is developed and maintained when an individual withdraws from rewarding activities, such as social interactions, work or exercise, and this withdrawal disrupts the individual's access to positive reinforcement, leading to further decreases in mood, motivation and further withdrawal (Hopko, Armento, Cantu, Chambers, & Lejuez, 2003; Hopko & Mullane, 2008; Martell, 2010). Accordingly, Behavioral Activation (BA) treatments have been devised to address these behavioral maintaining factors within this model, with the ultimate goal of increasing the individual's activation and engagement with their world. When receiving BA, individuals with MDD are encouraged to engage in

pleasurable activities that are consistent with their life values, in a scheduled hierarchical manner (Lejuez, Hopko, Acierno, Daughters, & Pagoto, 2011; Martell, 2010)

Behavioral therapy emerged as a stand-alone treatment option after it was observed that the behavioral component of a cognitive therapy treatment for depression was as effective in reducing symptoms of depression as the full cognitive therapy intervention (Jacobson et al., 1996). Furthermore, the efficacy of BA treatment for depression has been observed across a range of client settings including depressed medical patients, inpatients in a psychiatric hospital and community samples (Hopko et al., 2003; Hopko et al., 2008; Lejuez, Hopko, LePage, Hopko, & McNeil, 2001; Porter, Spates, & Smitham, 2004). A recent study suggests that improvements in depressive symptoms can be observed even when BA treatment is administered in a single session (Gawrysiak, Nicholas, & Hopko, 2009). Gawrysiak and colleagues (2009) administered a single session of a BA treatment to university students reporting moderate levels of depression and found the intervention group had a significantly greater reduction in depression at two week follow up, compared to a no treatment control group. The research, therefore, indicates that BA therapy, even in a single session form, can be an effective and parsimonious treatment option for depression. However, a limitation of the study was that no follow-up data was obtained, so it is therefore unclear as to whether the observed improvements in symptoms would be maintained.

Although primarily used as a treatment for clinically depressed clients, BA may well be useful as an intervention to enhance subjective wellbeing, at both a clinical and non-clinical level. The main principals of BA treatment are consistent with research findings on factors that influence happiness and wellbeing (Diener & Seligman, 2002; Lyubomirsky, King, & Diener, 2005; Lyubomirsky, Sheldon, & Schkade, 2005). For example, it has been reported that happy individuals are more socially active and engaged, and that happiness may be enhanced through engaging in activities that are consistent with ones values and

interests (Diener & Seligman, 2002; Lyubomirsky, King, et al., 2005; Lyubomirsky, Sheldon, et al., 2005). Furthermore, it has been reported that changes in life activity are a better predictor of long term happiness than circumstantial changes, suggesting that individuals who purposefully engage in positive activities are more likely to maintain feelings of positive wellbeing (Sheldon & Lyubomirsky, 2006). Mazzucchelli, Kane, & Rees (2010) conducted a meta-analysis to examine the effects of BA based interventions on wellbeing. Based on a sample of 20 studies the analysis found a significant and moderately sized effect of BA interventions on wellbeing, regardless of depression status. It was also noted by the authors that the observed improvements in wellbeing, following BA interventions, were maintained at 3-month follow-up. These findings suggest that BA offers a promising intervention for improving and sustaining wellbeing in clinical and non-clinical samples.

Measurement of wellbeing outcomes may offer a means of evaluating the usefulness of interventions in preventing depression and improving long-term mental health for individuals who are not clinically depressed. Instruments designed to measure wellbeing assess positive aspects of mental health such as life satisfaction, relationship satisfaction, positive affect and self efficacy (Tennant et al., 2007). Such qualities may be protective to developing depression. Research suggests that increased wellbeing and happiness is linked to general successes in life, such as successful relationships and careers, and that happy individuals are more likely to seek and achieve life successes such as successful relationships and careers (Diener & Seligman, 2002; Lyubomirsky, King, et al., 2005; Lyubomirsky, Sheldon, et al., 2005). This increased engagement with one's world, as observed in individuals with high levels of wellbeing, is likely to decrease the risk of developing depression (Hopko et al., 2003; Hopko & Mullane, 2008; Martell, 2010).

Accordingly, where an intervention is successful in maintaining wellbeing levels over time, it may also be effective in preventatively treating depression.

BA interventions for wellbeing may be particularly useful in preventing the development, or escalation, of depressive symptoms in some "at risk" populations. Most of the studies included in the Mazzuchelli et al (2010) meta-analysis employed samples of university students or adults from the community, with most samples reporting elevated levels of depression (Mazzucchelli, Kane, & Rees, 2010). It would therefore be useful to further explore the effects of BA on wellbeing across a range of population settings including non-clinical populations who may be at increased risk of experiencing depression. Individuals who act as "caregivers" may be an example of such a population due to lifestyle factors associated with such a role, including increased exposure to daily stress and potentially limited access to positively reinforcing events. It is consistently reported in the literature that the caregiving role is associated with increased burden, ongoing stress and lack of social support (Heru, Ryan, & Iqbal, 2004; Searson, Hendry, Ramachandran, Burns, & Purandare, 2008). These factors are likely impacting on the psychological wellbeing of caregivers and increasing the prevalence of clinical depression within this population (Olsson & Hwang, 2001; Waite, Bebbington, Skelton-Robinson, & Orrell, 2004). For example, parents of children with disabilities often report higher levels of daily stress and restrictions to personal life activity, and are found to be at increased risk of experiencing depressive symptomatology (Olsson & Hwang, 2001). Therefore, exploring methods to improve wellbeing in caregivers seems an important step in developing techniques to prevent depression and improve long-term community wellbeing.

BA techniques may present a simple yet promising intervention to improve wellbeing outcomes for caregivers. This is consistent with findings from Searson and colleagues (2008), who reported that carers experienced lower levels of psychological

morbidity when they engaged in pleasurable activities enjoyed by both the carer and patient. The authors noted that facilitating the engagement in such activities may be a positive strategy in reducing carer burden. There remains a need to further explore the utility of existing interventions to improve and sustaining wellbeing levels in the caregiver population. Furthermore, individuals in such a role are likely to have significant time restrictions, and would benefit from time-efficient, effective intervention programs. The singe session BA treatment protocol implemented by Gawrysiak and colleagues (2009) may offer a parsimonious intervention to improve and sustain wellbeing in caregiver populations, and to prevent the development of depression.

Significance of Current Study

Presently the field of clinical psychology, practice and research, tends to focus attention on clinical pathology. This study has the potential to inform practitioners, researchers and the broader community of the value of brief BA treatments, which can be adapted from existing knowledge and technologies, to increase wellbeing in non-clinical populations. Research suggests that the burden and costs associated with psychological disorders such as depression is extensive, which indicates the importance of developing effective, parsimonious treatment to boost individual and community wellbeing. This is of particular importance for sectors of the population who may be experiencing subclinical levels of depressive symptoms, or who are at increased risk of developing clinical depression, whereby currently treatment is predominately sought and implemented only when symptoms reach clinical levels. The study will potentially provide the platform for existing brief behavioral interventions to be developed and implemented across the broader community as an initiative towards improving community health and wellbeing.

Aims and Hypotheses

The present study aims to investigate the utility of a single session BA treatment, as implemented by Gawrysiak and colleagues (2009), to boost wellbeing in a non-clinical sample, as indicated by a reduction in any symptoms of depression and stress and an improvement in wellbeing outcomes. Furthermore the study aims to consider the possible preventative value of BA intervention by recruiting a sample of carers, who are hypothesized to be at increased risk of developing clinical depression, and investigate the maintenance of any such improvements over time. It is also anticipated that the intervention will significantly improve individual lifestyle factors linked to happiness and wellbeing, as indicated by measures of environmental reward and valued living. Based on previous findings the following hypothesis are formulated:

Psychometric Measures- Effectiveness of intervention:

H1a: At post treatment, BA intervention will be significantly superior to waitlist control in decreasing depressive symptoms, as measured by the DASS-21

H1b: At post treatment, BA intervention will be significantly superior to waitlist control in improving wellbeing outcomes, as measured by the WEMWBS and BWS

H2a: At post treatment, BA intervention will be significantly superior to waitlist control in increasing the extent to which participants live according to their values, as measured by the VLQ

H2b: At post treatment, BA intervention will be significantly superior to waitlist control in improving environmental reward, as measured by the RPI

H3: RPI and VLQ scores will predict performance on outcome measures

H4: Pre-post improvement on DASS-21, WEMWBS and BWS will be significantly maintained at 3-month follow-up

Method

Participants

A power analysis using G*power was calculated to determine the number of participants required for an 80% probability of capturing a 'moderate' interaction (i.e., f = .25) between group (intervention, control) and time (pre-test, post-test). According to G*Power, approximately 48 participants will be required (24 in each group). To account for attrition, and other exclusory criteria it is anticipated that approximately 60 participants will be recruited for the current study.

Participants will be recruited through information flyers and posters (see Appendix A), which will be distributed via organisations that provide carer services in the Perth metropolitan area, as well as through online media advertisement (See Appendix B for a list of relevant services). Individuals who express interest in the study will be contacted to discuss the nature of the study and intervention, a brief screening conversation will be part of the initial phone call to ensure that any individuals with severe pathology or suicidal ideation seek immediate support from a more intensive service.

Individuals who are the primary caregiver for a relative or person with a disability will be eligible to participate. There will be no exclusory criteria based on the type of disability that requires care, i.e. severe mental illness, dementia, developmental disability, so that carers across a variety of rolls will be eligible to participate. Individuals who indicate severe pathology, either in initial screening process or subsequent screening, will not be eligible for the current study.

Design

Prior to commencing intervention, participants will be randomly allocated to one of two conditions; intervention or waitlist control. Both groups will complete psychometric

measures at baseline (Time 1) and once the intervention group has completed the 2 week intervention period (Time 2). The intervention group will also complete psychometric measures at 3-month follow-up (Time 3). The study will therefore us a pre/post mixed design, with intervention condition as the between subjects factor. Participants in both conditions will be asked to refrain from seeking any additional psychological treatment during the treatment period. Participants in the control group will be offered the intervention 1 month after the treatment group has received the intervention.

Measures

Modified Mini Screen (MMS) is a 22-item scale designed to identify persons in need of assessment in the domains of mood disorders, anxiety disorders, and psychotic disorders (Alexander, Haugland, Lin, Bertollo, & McCorry, 2008). It asks general questions that are similar to those found in screening, diagnostic, and assessment tools such as the Mini International Neuropsychiatric Interview (Lecrubier et al., 1997) The MMS takes approximately 15 minutes to administer (see Appendix C). The MMS is not a diagnostic tool and is appropriate tool for the current study, given that participants are unlikely to have any diagnoses. However, it will be useful in identifying those that may be in need of more appropriate psychological support.

Depression, Anxiety, Stress Scale 21 (DASS-21(Lovibond & Lovibond, 1995) is a 21-item self-report measure that assesses depression, anxiety and stress in adults (see Appendix D). The DASS-21 is widely used with high internal consistencies for the Depression ($\alpha = .88$), Anxiety ($\alpha = .82$), Stress ($\alpha = .90$) scales, and good convergent and concurrent validity (Henry & Crawford, 2005). The DASS-21 will be administered pre and post intervention and at follow up.

Warwick-Edinburgh Mental Well-being Scale (WEMWBS) is a 14-item measure of mental wellbeing that focuses specifically on positive aspects of mental health (Tennant et al.,

2007) (See Appendix E). Individuals rate their experience of a series of statements (e.g. "I've been feeling optimistic about the future") on a scale of 1 (none of the time) to 5 (all of the time). The scale has good content validity, and test-retest reliability (0.83) (Tennant et al., 2007). This measure will be included to assess improvements in subjective wellbeing, and will be administered pre and post intervention, and at follow up.

*Brief Wellbeing Scale (*BWS) is a brief 22-item measure designed to assess subjective wellbeing (Mazzucchelli, unpublished manuscript) (see Appendix F). Individuals rate on a scale of 0-3 how true a series of statements are in regards to the past week. Preliminary factor analysis on the BWS supports the anticipated factor structure. The BWS will be administered pre and post intervention and at follow up, as an additional measure of subjective wellbeing.

Valued Living Questionnaire (VLQ) is a brief two-part instrument designed to assess how consistently an individual is living their life values (Wilson, Sandoz, Kitchens, & Roberts, 2010) (see Appendix G). In the first part participants rate the importance of 10 domains of living on a 10-point Likert-style scale. These life domains are: (a) family (other than parenting and intimate relations), (b) marriage/couples/intimate relations, (c) parenting, (d) friendship, (e) work, (f) education, (g) recreation, (h) spirituality, (i) citizenship, and (j) physical self-care. In the second part participants rate on the same 10-point scale how consistently they have lived within their values across these domains, in the last week. The VLQ has preliminary psychometric support (Wilson et al., 2010). The BA intervention is aimed at increasing activation and engagement in areas that are consistent with an individual's life values, the VLQ will therefore be useful in evaluating the effectiveness of this aspect of intervention. The VLQ will be administered pre and post intervention and at follow up.

Reward Probability Index (RPI) is a 20 item measure that assesses environmental reward (Carvalho et al., 2011) (see Appendix H). Individuals rate the level of agreement, from 1 (strongly disagree) to 4 (Strongly agree) of a series of statements relating to environmental positive reinforcement (e.g., "I make the most of the opportunities that are available to me"). Higher scores indicate higher levels of reinforcement. The RPI has strong internal consistency (α = .90), and good convergent validity (Carvalho et al., 2011). This measure will be included to assess the effectiveness of the intervention in increasing participants' engagement and access to environmental reward. The RPI will be administered pre- and post-intervention and at follow-up.

Credibility / Expectancy Questionnaire is a self report measure that evaluates treatment expectancy and rationale credibility (Devilly & Borkovec, 2000) (see Appendix I). This measure will be administered to the intervention group at the conclusion of the intervention session. It is important for treatment rationale to be perceived as being convincing for the individual to then engage well in their treatment plan. It is predicted that the intervention will be perceived as credible.

Client/Patient Satisfaction Questionnaire will be administered post intervention to assess the client's satisfaction with the treatment (Larsen, Attkisson, Hargreaves, & Nguyen, 1979) (see Appendix J).

Description of Intervention

The single session BA intervention was adapted from the Brief Behavioral Activation Treatment for Depression (BATD) manual (Lejuez et al., 2011; Lejuez, Hopko, & Hopko, 2002) whereby participants identify their key values across five life areas (relationships, education/career, recreation/interests, physical health, spirituality) and then identify activities within each area that they would like to engage in. Importantly, the activities should be consistent with each individual's values. For the current study, and as

done by Gawrysiak et al. (2009), the original nine-session format will be condensed into a single 90 minute session, whereby a greater amount of activities will be targeted for immediate engagement.

One of two postgraduate students in clinical psychology will administer the intervention in an individualised format. The clinical students will be trained in the relevant BA techniques through a combination of online training, and video training (Lejuez & Hopko, 2011; Puspitasari, Kanter, Murphy, Crowe, & Koerner, 2013). The intervention session will last 90 minutes, and will begin with the presentation of a treatment rationale as used in the original BATD manual (Lejuez et al., 2011; Lejuez et al., 2002). Following this, participants will identify their key values across the five life areas, and will work collaboratively with clinicians to identify structured behavioural goals, consistent with those values to achieve within the 2-week treatment period. Participants will use two weekly activity monitoring forms to keep track of number of activities and goals achieved during each of the 2-weeks in the intervention period.

Procedure

Initial appointment. Once consent is obtained an initial appointment will be made. The initial appointment includes general introductory information, administration of the MMS and completion of baseline psychometric measures (see Appendix Ka for session guide). Participants who indicate they may be experiencing clinical levels of depression will be referred either to a concurrent study to receive alternate treatment or to an appropriate service (see Appendix L). Participants in the control group will be informed they will be contacted and asked to complete the same measures a second time in two weeks, and will commence intervention following this, in approximately a months time. Participants in the intervention group will proceed with the intervention.

Intervention. The intervention component comprises a 90 minute BATD session, and a 2 week intervention period for which participants will aim to achieve the behavioural goals set up during the intervention session (see Appendix Kb). Psychometric measures will be re-administered at the end of the 2-week intervention period to both participants in the intervention group and control (see Appendix Kc).

Follow up. At 3 months following the intervention period, participants in the intervention condition will be re-contacted and psychometric measures re-administered (see Appendix Kd).

Data Analysis

Prior to conducting the analysis, participant activity forms will be analysed to ensure that participants were appropriately engaged in the intervention. For each participant, the proportion of goals they were able to achieve will be calculated. To assess whether proportion of goals met, significantly impacted on outcome variables the goal scores will be entered into a regression analysis as a predictor variable. Participants with scores lower than .5 (i.e. achieved less than 50% of goals) may need to be excluded from the analysis.

Hypotheses 1-4 will be testes with a series of Generalised Linear Mixed Models (GLMM). In order to optimise the likelihood of convergence, the GLMMs will be be tested separately for each of the three outcome measures (DASS-21, WEMBWS, BWS). To control for inflation of familywise errorrate, as a result of analysing each outcome independently of other, each GLMM will be evaluated at a Bonferroni adjusted alpha-level of .0125.

To assess pre/post improvements (H1a- 2b) the GLMM will have one nominal random effect (participant), one nominal fixed effect (group: intervention, waitlist control), one ordinal fixed effect (time: pre, post), and the Group x Time interaction. To assess

maintenance of improvements (H4) the GLMM has one nominal random effect (participant) and one ordinal fixed effect (time: pre, post, f/up).

To assess the mediating effects of environmental reward and valued living (H3) the GLMM will have one nominal random effect (participant), one nominal fixed effect (group: intervention, waitlist control), and two scale fixed effects (environmental reward, valued living). Group is the independent variable; environmental reward and valued living are the mediators; depression and wellbeing scores are the outcome. Environmental reward, valued living, wellbeing and depression will be analysed as pre-post change scores. To assess the comparative predictor effects the GLMM will be run twice: Once with the mediators (environmental reward, valued living) and then again without them. A comparison of the two regression coefficients for the fixed group factor (intervention, control) will indicate whether there is mediation. If there is, then follow up analysis will be conducted to determine whether environmental reward and valued living are *both* mediators or whether just one variable is carrying the intervention effect.

Ethical Issues

Although the current study will not be targeting individuals with clinical depression, we will be recruiting from a sample where there may be an increased risk of individuals experiencing or developing symptoms of depression. There are two screening procedures prior to intervention, a mini phone screening and a mini clinical interview, to ensure that individual's with clinical levels of pathology can be referred, where necessary, to a more appropriate service. Clinicians who will be implementing the intervention will be in their final year of postgraduate clinical studies, and have therefore developed skills and abilities in the area of client care and risk assessment, which will be relevant throughout the course of the study. To further ensure clients receive optimal care and service, the intervention will

be offered to the control group 1 month after the intervention group. The project is supervised by a clinical psychologist, Dr Trevor Mazzucchelli, who has many years of experience and knowledge in the area of behavioural activation and depression.

Written informed consent must be submitted prior to the commencement of the study (see Appendix M and N). Any information will be de-identified and participants reserve the right to withdraw from the study at any time, without prejudice. Participants' information will be destroyed if they decide to withdraw from the study. A list of appropriate services will be provided to participants if they require further assistance following the intervention (see Appendix J).

Facilities and Resources

Funding

The proposed study will attract some costs, as outlined below. The participant sessions will be conducted out of the Curtin Psychology Clinic, so there will be no associated venue costs. Additional costs of printing and recruitment materials will be covered personally by the researcher, or by the School of Psychology and Speech Pathology Masters research funding.

Item	Cost per item	Quantity required	Cost
Test Protocols			
MINI	$2.86	60	$171.60
DASS-21	$0.11	180	$19.80
VLQ	$0.22	180	$39.60
RPI	$0.11	180	$19.80
WEMWBS	$0.11	180	$19.80
BWS	$0.22	180	$39.60
Credibility/Expectancy	$0.11	30	$3.30
Client Satisfaction	$0.11	60	$6.60
BA Training	Free		
Recruitment Materials			
Information sheets/flyers	$0.50	30	$15.00
Participant Materials			
Information and consent forms	$0.22	60	$13.20
Additional costs			
Mail costs	$0.50	100	$50.00
Estimated total cost			$398.30

Timeline

Date	Task
2014	
March-April	Submit dissertation proposal draft 1
	Submit dissertation Proposal draft 2
	Ethics submission Curtin University
April-May	Complete BA training
	Prepare materials/measures
	Ethics Approval
	Begin recruitment of participants
May – June	Continue recruitment as needed
	Submit literature review draft 1
	Submit literature review draft 2
	Begin conducting initial interviews
June – August	Commence intervention
	Continue with intervention
August- September	Commence intervention for control group
	Commence follow-up
October	Complete follow-up
	Begin writing dissertation draft 1
	Submit dissertation draft 1
November -	Submit dissertation draft 2
December	Submit dissertation

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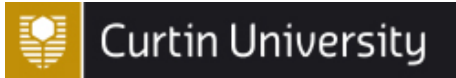
Appendix A
(Recruitment Flyer/Advertisement)



Improving Wellbeing

Feelings of happiness and wellbeing are linked to increased successes in life, such as better job performance and healthier relationships. The current study investigates the benefits of a simple and short program aimed at increasing wellbeing.

Living a fulfilling life, and living within ones values, is a naturally rewarding experience. Behavioral Activation aims to reconnect individuals with such rewarding life experiences. Research suggests that this approach can increase mood and motivation.

The current study is investigating the benefits of a single 90 minute session of a Behavioral Activation program for individuals working as carers, who may be exposed to increased daily stress and may benefit from support aimed to increase feelings of wellbeing.

For more information please contact Ainsley Read
ainsley.read@postgrad.curtin.edu.au

Appendix B

Perth Carer Organisations and Services

1) ARAFMI Mental Health Carers & Friends Association (WA) Inc.
Ph: 08 9427 7100 (Perth) | Free call: 1800 811 747 (Rural areas)
Website: www.arafmi.asn.au

2) Carers WA
Ph: 1300 227 377)
Webaite: www.carerswa.asn.au

3) Commonwealth Respite & Carelink Centre
Ph: *1800 022 022 (National)*
Websie: www9.health.gov.au/ccsd

4) Red Cross Carers Support
Ph : 9225 8835
Email: info@redcross.org.au
Website: http://www.redcross.org.au

5) Baptistcare
Ph: 9282 8600
Email: admin@baptistcare.com.au
Web: http://www.baptistcare.com.au

Appendix C

Modified Mini Screen (MMS)

Client Name: ____________________ OASAS ID ____________________________

Weeks since admission _______________ Interviewer ____________________________

Today's Date________________________ Supervisor Initials (Optional)________________

SECTION A

1. Have you been consistently depressed or down, most of the day, nearly every day, for the past 2 weeks?	YES	NO
2. In the past 2 weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time?	YES	NO
3. Have you felt sad, low or depressed most of the time for the last two years?	YES	NO
4. In the past month**,** did you think that you would be better off dead or wish you were dead?	YES	NO
5. Have you ever had a period of time when you were feeling up, hyper or so full of energy or full of yourself that you got into trouble or that other people thought you were not your usual self? (Do not consider times when you were intoxicated on drugs or alcohol.)	YES	NO
6. Have you ever been so irritable, grouchy or annoyed for several days, that you had arguments, verbal or physical fights, or shouted at people outside your family? Have you or others noticed that you have been more irritable or overreacted, compared to other people, even when you thought you were right to act this way?	YES	NO
PLEASE TOTAL THE NUMBER OF "YES" RESPONSES TO QUESTIONS 1-6		

SECTION B

7. Note this question is in 2 parts. a. Have you had one or more occasions when you felt intensely anxious, frightened, uncomfortable or uneasy even when most people would not feel that way? YES NO b. If yes, did these intense feelings get to be their worst within 10 minutes? YES NO Interviewer: If the answer to BOTH a and b is YES, code the question YES. If the answer to either or both a and b is NO, code the question NO.	YES	NO
8. Do you feel anxious or uneasy in places or situations where you might have the panic-like symptoms we just spoke about? Or do you feel anxious or uneasy in situations where help might not be available or escape might be difficult? Examples include: ❑ Being in a crowd ❑ Standing in a line ❑ Being alone away from home or alone at home ❑ Crossing a bridge ❑ Traveling in a bus, train or car	YES	NO
9. Have you worried excessively or been anxious about several things over the past 6 months? Interviewer: If NO to question 9, answer NO to question 10 and proceed to question 11.	YES	NO
10. Are these worries present most days?	YES	NO
11. In the past month, were you afraid or embarrassed when others were watching you, or when you were the focus of attention? Were you afraid of being humiliated? Examples include: ❑ Speaking in public ❑ Eating in public or with others ❑ Writing while someone watches ❑ Being in social situations	YES	NO
12. In the past month, have you been bothered by thoughts, impulses, or images that you couldn't get rid of that were unwanted, distasteful, inappropriate, intrusive or distressing? Examples include: ❑ Were you afraid that you would act on some impulse that would be really shocking? ❑ Did you worry a lot about being dirty, contaminated or having germs? ❑ Did you worry a lot about contaminating others, or that you would harm someone even though you didn't want to? ❑ Did you have any fears or superstitions that you would be responsible for things going wrong? ❑ Were you obsessed with sexual thoughts, images or impulses? ❑ Did you hoard or collect lots of things? ❑ Did you have religious practice obsessions?	YES	NO

SECTION B (CONTINUED)

<table>
<tr><td>13. In the past month, did you do something repeatedly without being able to resist doing it?

Examples include:
❑ Washing or cleaning excessively
❑ Counting or checking things over and over
❑ Repeating, collecting, or arranging things
❑ Other superstitious rituals</td><td>YES</td><td>NO</td></tr>
<tr><td>14. Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else?

Examples Include:
❑ Serious accidents
❑ Sexual or physical assault
❑ Terrorist attack
❑ Being held hostage
❑ Kidnapping
❑ Fire
❑ Discovering a body
❑ Sudden death of someone close to you
❑ War
❑ Natural disaster</td><td>YES</td><td>NO</td></tr>
<tr><td>15. Have you re-experienced the awful event in a distressing way in the past month?

Examples include:
❑ Dreams
❑ Intense recollections
❑ Flashbacks
❑ Physical reactions</td><td>YES</td><td>NO</td></tr>
<tr><td>PLEASE TOTAL THE NUMBER OF “YES” RESPONSES TO QUESTIONS 7-15</td><td colspan="2"></td></tr>
</table>

SECTION C

16. Have you ever believed that people were spying on you, or that someone was plotting against you, or trying to hurt you?	YES	NO
17. Have you ever believed that someone was reading your mind or could hear your thoughts, or that you could actually read someone's mind or hear what another person was thinking?	YES	NO
18. Have you ever believed that someone or some force outside of yourself put thoughts in your mind that were not your own, or made you act in a way that was not your usual self? Or, have you ever felt that you were possessed?	YES	NO
19. Have you ever believed that you were being sent special messages through the TV, radio, or newspaper? Did you believe that someone you did not personally know was particularly interested in you?	YES	NO
20. Have your relatives or friends ever considered any of your beliefs strange or unusual?	YES	NO
21. Have you ever heard things other people couldn't hear, such as voices?	YES	NO
22. Have you ever had visions when you were awake or have you ever seen things other people couldn't see?	YES	NO
PLEASE TOTAL THE NUMBER OF "YES" RESPONSES TO QUESTIONS 16-22		

SCORING THE SCREEN

NUMBER OF "YES" RESPONSES FROM SECTION A	
NUMBER OF "YES" RESPONSES FROM SECTION B	
NUMBER OF "YES" RESPONSES FROM SECTION C	
TOTAL NUMBER OF "YES" RESPONSES FROM SECTIONS A, B, AND C • Score $\geq$ 10, assessment needed • Score $\geq$ 6 & $\leq$ 9, assessment need should be determined by treatment team • Score $\leq$ 5, no action necessary unless determined by treatment team	
YES RESPONSE TO QUESTION #4 • If score = 1, assessment is needed	
YES RESPONSES TO QUESTIONS #14 AND #15 • If score = 2, assessment is needed	

SCORE INDICATED NEED FOR AN ASSESSMENT? (CIRCLE) YES NO

IF NO, DID TREATMENT TEAM DETERMINE THAT AN ASSESSMENT WAS NEEDED? (CIRCLE) YES NO

Appendix D

DEPRESSION-ANXIETY-STRESS SCALES 21

Name:____ Date:____________________

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me a considerable degree, or a good part of the time

3 Applied to me very much, or most of the time

1.	I found it hard to wind down.	0	1	2	3
2.	I was aware of dryness in my mouth.	0	1	2	3
3.	I couldn't seem to experience any positive feeling at all.	0	1	2	3
4.	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness) in the absence of physical exertion.	0	1	2	3
5.	I found it difficult to work up the initiative to do things.	0	1	2	3
6.	I tended to over-react to situations.	0	1	2	3
7.	I experienced trembling (e.g., in the hands).	0	1	2	3
8.	I felt that I was using a lot of nervous energy.	0	1	2	3
9.	I was worried about situations in which I might panic and make a fool of myself.	0	1	2	3
10.	I felt that I had nothing to look forward to.	0	1	2	3
11.	I found myself getting agitated.	0	1	2	3
12.	I found it difficult to relax.	0	1	2	3
13.	I felt down-hearted and blue.	0	1	2	3
14.	I was intolerant of anything that kept me from getting on with what I was doing.	0	1	2	3
15.	I felt close to panic.	0	1	2	3
16.	I was unable to become enthusiastic about anything.	0	1	2	3
17.	I felt I wasn't worth much as a person.	0	1	2	3
18.	I felt that I was rather touchy.	0	1	2	3
19.	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).	0	1	2	3
20.	I felt scared without any good reason.	0	1	2	3
21.	I felt that life was meaningless.	0	1	2	3

Appendix E

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)
Below are some statements about feelings and thoughts.
Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Appendix F

Brief Wellbeing Scale (BWS)

Name:____ Date:_________

Please read each statement and circle a number on the scale to show **how true** the statement was for you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

Example

I felt calm	0	1	2	3

	How true is this of you?			
	0	1	2	3
	Not at all	A little (some of the time)	Quite a lot (a lot of the time)	Very much (most of the time)
1. I felt happy	0	1	2	3
2. I did things towards my long-term goals, even if they were hard	0	1	2	3
3. I felt a sense of purpose in life	0	1	2	3
4. I felt sad	0	1	2	3
5. I was confident that I could achieve my goals	0	1	2	3
6. I tried to avoid feeling anxious, sad or upset	0	1	2	3
7. I felt enthusiastic	0	1	2	3
8. I felt disappointed in who I am	0	1	2	3
9. I felt irritable	0	1	2	3
10. I felt good about myself	0	1	2	3
11. I felt that I had no warm and trusting relationships	0	1	2	3

		How true is this of you?			
		0 Not at all	1 A little (some of the time)	2 Quite a lot (a lot of the time)	3 Very much (most of the time)
12.	I felt pressured to behave in particular ways	0	1	2	3
13.	I felt like I was wandering aimlessly through life	0	1	2	3
14.	I felt I was improving as a person	0	1	2	3
15.	I felt helpless in dealing with the problems of life	0	1	2	3
16.	I felt calm	0	1	2	3
17.	I felt close to other people	0	1	2	3
18.	I felt bored	0	1	2	3
19.	I felt that my life is far from my ideal	0	1	2	3
20.	I felt like I was stagnating as a person	0	1	2	3
21.	I chose how to spend my time	0	1	2	3
22.	I felt satisfied with my life	0	1	2	3

Appendix G

VALUED LIVING QUESTIONNAIRE 1

NAME:____ DATE:_______
______

Instructions: Below are areas of life that are valued by some people. We are concerned with your quality of life in each of these areas. One aspect of quality of life involves the importance one puts on different areas of living. Rate the importance of each area (by circling a number) on a scale of 1 to 10. 1 means that area is not at all important. 10 means that area is very important. Not everyone will value all of these areas, or value all areas the same. Rate each area according to your own personal sense of importance.

	Area	**Not at all important**									**Extremely important**
1.	Family (other than marriage or parenting)	1	2	3	4	5	6	7	8	9	10
2.	Marriage/couples/intimate relations	1	2	3	4	5	6	7	8	9	10
3.	Parenting	1	2	3	4	5	6	7	8	9	10
4.	Friends/social life	1	2	3	4	5	6	7	8	9	10
5.	Work	1	2	3	4	5	6	7	8	9	10
6.	Education/training	1	2	3	4	5	6	7	8	9	10
7.	Recreation/fun	1	2	3	4	5	6	7	8	9	10
8.	Spirituality	1	2	3	4	5	6	7	8	9	10
9.	Citizenship/community Life	1	2	3	4	5	6	7	8	9	10
10.	Physical self care (diet, exercise, sleep)	1	2	3	4	5	6	7	8	9	10

VALUED LIVING QUESTIONNAIRE (cont.)

Instructions: In this section we would like you to give a rating of how consistent your actions have been with each of your values. We are not asking about your ideal in each area. We are also not asking what others think of you. Everyone does better in some areas than others. People also do better at some times than at others. We want to know how you think you have been doing during the past week. Rate each area (by circling a number) on a scale of 1 to 10. 1 means that your actions have been completely inconsistent with your value. 10 means that your actions have been completely consistent with your value.

		During the past week									
	Area	**not at all consistent with my value**									**completely consistent with my value**
1.	Family (other than marriage or parenting)	1	2	3	4	5	6	7	8	9	10
2.	Marriage/couples/intimate relations	1	2	3	4	5	6	7	8	9	10
3.	Parenting	1	2	3	4	5	6	7	8	9	10
4.	Friends/social life	1	2	3	4	5	6	7	8	9	10
5.	Work	1	2	3	4	5	6	7	8	9	10
6.	Education/training	1	2	3	4	5	6	7	8	9	10
7.	Recreation/fun	1	2	3	4	5	6	7	8	9	10
8.	Spirituality	1	2	3	4	5	6	7	8	9	10
9.	Citizenship/community Life	1	2	3	4	5	6	7	8	9	10
10.	Physical self care (diet, exercise, sleep)	1	2	3	4	5	6	7	8	9	10

Appendix H

Reward-Probability Index (RPI)

Thinking about the past several months, please answer the following questions using this scale:

1 = Strongly Disagree
2 = Disagree
3 = Agree 4 = Strongly Agree

_____ 1. I have many interests that bring me pleasure.
_____ 2. I make the most of opportunities that are available to me.
_____ 3. My behaviours often have negative consequences.
_____ 4. I make friends easily.
_____ 5. There are many activities that I find satisfying.
_____ 6. I consider myself to be a person with many skills.
_____ 7. Things happen that make me feel helpless or inadequate.
_____ 8. I feel a strong sense of achievement.
_____ 9. Changes have happened in my life that have made it hard to find enjoyment.

_____ 10. It is easy to find good ways to spend my time.
_____ 11. I have the abilities to obtain pleasure in my life.
_____ 12. I have few financial resources, which limits what I can do.
_____ 13. I have had many unpleasant experiences.
_____ 14. It seems like bad things always happen to me.
_____ 15. I have good social skills.
_____ 16. I often get hurt by others.
_____ 17. People have been mean or aggressive toward me.
_____ 18. I have been very capable in jobs I have had.
_____ 19. I wish I could find a place to live that brought more satisfaction to my life.

_____ 20. I have many opportunities to socialize with people.

Appendix I
Credibility / Expectancy Questionnaire

We would like you to indicate below how much believe, right now, that the therapy you are receiving will help to improve your lifestyle/functioning. Belief usually has two aspects to it: (1) what one thinks will happen and (2) what one feels will happened. Sometimes these are similar, sometimes they are different. Please answer the questions below. In the first set, answer in terms of what you think. In the second set answer in terms of what you really and truly feel.

Set I

1. At this point, how logical does the course offered to you seem?

1	2	3	4	5	6	7	8	9
not at all logical				somewhat logical				very logical

2. At this point, how successfully do you think this course will be in raising the quality of your functioning?

1	2	3	4	5	6	7	8	9
not at all useful				somewhat useful				very useful

3. How confident would you be in recommending this course to a friend who experiences similar problems?

1	2	3	4	5	6	7	8	9
not at all confident				somewhat confident				very confident

4. By the end of the course, how much improvement in your functioning do you think will occur?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Set II

For this set, close your eyes for a few moment and try to identify what you really feel about the course and its likely success. Then answer the following questions.

1. At this point, how much do you really feel that the course will help you to improve your functioning?

1	2	3	4	5	6	7	8	9
not at all				somewhat				very much

2. By the end of the course, how much improvement in your functioning do you feel will occur?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Appendix J

CLIENT SATISFACTION QUESTIONNAIRE

Please help us improve our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative. *Please answer all of the questions.* We also welcome your comments and suggestions. Thank you very much; we really appreciate your help.

Circle your answer:

1. How would you rate the quality of service you have received?

4	3	2	1
Excellent	Good	Fair	Poor

2. Did you get the kind of service you wanted?

1	2	3	4
No, definitely	No, not really	Yes, generally	Yes, definitely

3. To what extent has our program met your needs?

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5. How satisfied are you with the amount of help you have received?

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6. Have the services you received helped you to deal more effectively with your problems?

4	3	2	1
Yes, they helped a great deal	Yes, they helped	No, they really didn't help	No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the service you have received?

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

8. If you were to seek help again, would you come back to our program?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

Appendix Ka

Session checklists for proposed BA program

Session Checklist: Initial Appointment

1. Introduction ☐
    - Introduce self and provide information about study

2. MMS ☐
    - Administer MINI screen

3. Psychometric Measures ☐
    - DASS-21
    - WEMWBS
    - BWS
    - VLQ
    - RPI

4. Intervention appointment ☐
    - Inform participants in control group that they will be contacted several weeks to complete questionnaires a second time, and in approximately a month to receive the intervention
    - Proceed to intervention with intervention group

Appendix Kb

Session Checklist: Intervention

1. Psychoeducation ☐
    - Discuss some of the positive benefits on improving wellbeing
    - Briefly discuss link between improved wellbeing and prevention of depression

2. Treatment Rationale ☐
    - Discuss the importance of engaging in value-based activities, which produce a sense of pleasure, as a way to combat low mood and self-esteem.

3. Life Values Assessment ☐
    - Participants identify important values across five life areas

4. Goal Setting ☐
    - Based on life values assessment, participants identify goals and activities that are consistent with their values
    - Construct activity hierarchy, starting with easy to achieve activities
    - Establish structured goals, including frequency and duration of desired activities

5. Behavioural Monitoring ☐
    - Discuss importance of monitoring progress
    - Introduce monitoring forms

6. Book follow-up ☐
    - Book appointment for 2 weeks from intervention date

Appendix Kc

Session Checklist: Intervention Conclusion (2 weeks later)

1. Review progress ☐
    - Review goals and monitoring forms (for intervention group only)

2. Re-administer psychometric measures ☐
    - DASS-21
    - WEMWBS
    - BWS
    - VLQ
    - RPI

3. Follow up appointment (for intervention group only) ☐
    - Inform participants they will be contacted in 3 months time for a final follow up appointment

Appendix Kd

Session Checklist: Follow up Appointment

1. Phone call to participant ☐
    - Remind participant that they will be mailed psychometric measures

2. Administer psychometric measures via mail
    - DASS-21
    - WEMWBS
    - BWS
    - VLQ
    - RPI

2. Phone call Debrief ☐
    - Once measures have been returned provide participants with additional information about the purpose of the study

Appendix L

List of additional mental health services

Emergency Help:

Lifeline: 13 11 14

Crisis Care Helpline: 1800 199 008

Counseling Services:

Centre for Clinical Interventions (CCI)
Address: 223 James St, Northbridge WA
Ph: 9227 4399

Curtin Psychology Clinic
Ph: 9266 3436
Email: psychology.clinic@curtin.edu.au

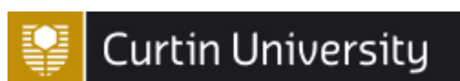
St John of God Counselling Centre (Fremantle)
Address: 42 Henry St, Fremantle WA
Ph: 9282 5012

Healthfocus Clinical Psychology Services
Address: Shop 6, 7 Albany Highway, Armadale WA
Phone: 9399 1911

Info-line:

beyondblue Info Line
Tel: 1300 22 4636 (24 hour service)
For the cost of a local call, the beyondblue info line provides callers with access to information and referral to relevant services for depression and anxiety related matters (not a counselling service).

Appendix M
(Information Sheet)



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Phone: 9266 7182

Improving wellbeing with behavioural activation

You are invited to participate in a research project investigating the means by which wellbeing can be improved in the general population

What is the study about?
Research suggests that engaging in both pleasurable and important activities is an effective technique to reduce symptoms of depression, this is known as Behavioral Activation. There is also evidence to suggest that Behavioural Activation may be beneficial in boosting feelings of happiness and wellbeing in people who are not depressed. The current study aims to investigate this further, by assessing the effects of a single session Behavioral Activation treatment for individuals who are not depressed.

Who can participate?
We are asking for individuals who work in a “carer” role, such as disability workers or parents of children with disabilities, to participate. Research suggests that many individuals in these roles have increased exposure to stress and may benefit from programs aimed at increasing wellbeing. Given that research has linked increased happiness and wellbeing to a range of positive outcomes including improved work performance and healthy relationships, we believe that this is an important area to provide assistance in.

What will the study involve?
Once you have submitted the consent form, you will be contacted to set up an initial meeting to discuss your participation in the study. You will have a 50% chance of starting the program after an initial meeting. If you do not start the program immediately, you will be offered the program five weeks later. The study comprises of three phases:

Initial Meeting
Participation will first involve an initial meeting with a clinical psychologist trainee, in which you will be provided with further information about the study and asked a series of questions about any psychological symptoms you may be experiencing. At this meeting you will also be asked to complete a number of questionnaires, which include questions about your mood, level of stress and daily life activities. Following this, an appointment to complete the treatment program will be organised. Participants who indicate that they are experiencing severe levels of psychological symptoms may be referred to a more appropriate service.

Behavioral Activation Program
The Behavioral Activation program will be delivered in a single 90 minute individual session with a practitioner. The program will involve identifying life values and goals, and working collaboratively with the therapist to discuss steps towards achieving these goals. This will involve scheduling activities, and problem solving potential obstacles to participating in these activities. The session will be video recorded to ensure researchers are implementing the program to a high and consistent standard. Following this, you will be asked to use the strategies discussed in the session in their daily life.

Follow up Meetings
In order to assess the benefits of the program and your progress, participation will also involve a number of follow-up meetings, which will be scheduled for approximately two weeks after the initial meeting. These will be shorter meetings, lasting approximately 30 minutes, in which you will be asked to complete the same questionnaires from the initial meeting. You may also be asked to complete the questionnaires a third time, three months after you attended the behavioural activation session. This is to monitor the effectiveness of the program over time.

Confidentiality
All information will be treated in the strictest of confidence. Documents, questionnaires and video recordings will be coded with an ID number and kept by the Principal Investigator in a locked room. Data will be stored for 7 years following the study, after which it will be destroyed.

The results of the study may be published in scholarly journals. Your name, or any other identifying information, will not be mentioned in any written reports of this study. You are free to withdraw at any time, without prejudice, and need give no reason or justification for your decision.

How do I sign up for the study?
If you would like to take part in this study, kindly complete the enclosed consent form and return it in the **reply paid** envelope. Upon receiving your form, I will be contacting you to discuss your eligibility for the study, and to set up the initial meeting.

If you require further details about the study, please contact:

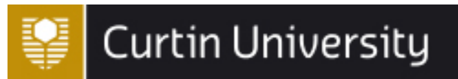
Ainsley Read (co-investigator) on 9266 3436 / ainsley.read@postgrad.curtin.edu .au
or
Dr Trevor Mazzucchelli (principal investigator) on 9266 7182/
trevor.mazzucchelli@curtin.edu.au.

Approval to conduct this research has been provided by Curtin University, in accordance with its ethics review and approval procedures. Any person considering participation in this research project, or agreeing to participate, may raise any questions or issues with the researchers at any time.

In addition, any person not satisfied with the response of researchers may raise ethics issues or concerns, and may make any complaints about this research project by contacting the Human Research Ethics Office at Curtin University on (08) 9266 9223or by emailing to hrec@curtin.edu.au

All research participants are entitles to retain a copy of any Participant Information For and/or Participant Consent Form relating to this research project.

Appendix N



Dr Trevor Mazzucchelli
School of Psychology
Curtin University
Kent Street, Bentley WA 6102
Email: trevor.mazzucchelli@curtin.edu.au

CONSENT FORM

Improving wellbeing with behavioural activation

I ______________________(the participant) have read the Information Sheet and any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realising that I may withdraw at any time without reason and without prejudice.

I understand that all information provided is treated as strictly confidential and will not be released by the investigator unless required to do so by law. I have been advised as to what data is being collected, what the purpose is, and what will be done with the data upon completion of the research. I understand and agree for all the sessions to be videotaped for treatment integrity, and am aware that all videos will be kept securely for 7 years upon project completion and it will be securely disposed thereafter. I agree that research data gathered for the study may be published provided my name or other identifying information is not used.

________________________ _______________

Participant Date

Chief Investigator
Dr Trevor Mazzucchelli
trevor.mazzucchelli@curtin.edu.au

Co-Investigators
Ainsley Read and Natalie Burge
ainsley.read@postgrad.curtin.edu.au
natalie.burge@postgrad.curtin.edu.au

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