A Study Examining Behavioural Activation (BA)

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General Abstract

Purpose – Behavioural Activation (BA) is a short-term and risk-free programme designed to provide minimal guidance to individuals allowing them to challenge their behaviours, facilitating self-governance. Research has primarily focused on the investigation of BA with individuals experiencing depressive symptoms usually in a face-to-face environment. This method has shown to be productive for this group but there is limited research surrounding those experiencing low mood; reduced well-being or those who are unable to attend face-to-face sessions. As such, the focus of this paper was to firstly conduct a review encompassing research around BA in relation to psychological distress i.e., depression and anxiety followed by a reflective methodological piece exploring the methodological choices and actions. This is then followed by an empirical paper examining a single session online BA (SSBA) programme using a randomised controlled trial (RCT) which is finally followed by a reflexive statement.

Methods – A systematic literature review was conducted using the Preferred Register of Systematic Reviews and Meta-analyses (PRISMA) guidelines alongside the Critical Appraisal Skills Programme (CASP) to examine studies that had explored BA with psychological distress. From this review eighteen RCTs met the inclusion criteria.
An empirical study was conducted using an RCT to examine the effectiveness of a SSBA programme online in reducing low mood and increasing well-being. Twenty participants were recruited with ten participants randomly allocated in each condition i.e., either the SSBA programme or the mindfulness control group. Many of the participants were academics and completed a pre- and post-assessment which was assessed using a Moods and Feelings questionnaire (MFQ – Angold & Costello (1987) and the Quality-of-Life questionnaire (QoL – Endicott et al, 1993) (Appendix 1).

Results – Within the systematic review the eighteen RCTs indicated an improvement in psychological distress symptoms with the majority reducing the depressive symptoms significantly more than the control or comparative group. In addition to this, online and face-to-face BA study results indicated no significant differences suggesting the application of BA can be just as effective online as it is face-to-face.

Even though the empirical paper findings suggest that group statistical analyses did not reveal statistically significant results, independently, 50% of the participants in the SSBA condition presented with low mood and an increase in well-being.

Conclusions – Despite the studies in the review indicating promising results it may have been useful to consider how the findings would have been if the research was conducted over a longer period and with different populations i.e., gender and age groups. This was also indicative in the empirical paper as many of the participants were academics and the results may have differed if different populations were also involved. Therefore, there is a need to establish more rigour to establish the effectiveness of an SSBA programme in increasing wellbeing. Future studies should include larger sample sizes, longer follow-up periods and stronger methodological designs.

General Introduction

The focus of this thesis will be to examine the existing literature surrounding Behavioural Activation (BA) to assess whether the intervention can facilitate psychological support in individuals waiting to receive therapy. BA is a brief, cost-effective approach designed to challenge individuals' behaviours allowing them to understand and substitute avoidance behaviours (Lejeuz et al, 2001). Literature has primarily focused on BA and depression indicating promising results with limited research suggesting the benefits of BA with other psychological distresses such as anxiety or low mood.

Cognitive behavioural therapy (CBT) has been the trailblazer in psychological therapy for many years owing to the effectiveness in reducing depression, anxiety, and many other psychological distresses (Tolin, 2010). This is also evidential in the NICE (2022) guidelines which suggest CBT as the forefront psychological therapy for many mental health difficulties. As a result of this, other psychological therapies are often disregarded, as more individuals and practitioner access CBT with the Royal College of Psychiatrists (RC Psych) (2022) reporting a record number of nearly 2 million CBT appointments having taken place in 2021 amidst the pandemic, increasing therapy waiting times.

The British Medication Association (BMA, 2018) found that due to waiting times many individuals waited for at least six months before receiving any access to therapy. Reichert and Jacobs (2018) examined the impact of waiting time on patient outcomes and found longer waiting times increased the individuals need for therapy as their condition deteriorated, which could have been reduced if they were able to seek treatment much sooner (Health Education England, 2017). Therefore, it may be useful to consider other short-term therapies whereby individuals would not have to wait for a long period to receive therapy and the therapy can be accessed by more individuals in the same time frame as one would be receiving CBT. For instance, as CBT follows a structured format of being anywhere from 8-

20 sessions, at the same time a few individuals may be able to access a 6-session model allowing around three individuals to access the short-term therapy at the same time one individual accesses CBT (BABCP, 2021). Thus, short-term treatment such as BA may yield just as effective results whilst reducing time commitment in terms of the number of sessions and therapist support (David et al., 2018; Liness et al., 2018; Gupta et al., 2019).

BA derives from behavioural theory whereby individuals learn through the process of conditioning to positively change their behaviour (Skinner, 1938, Wilder et al., 1998). BA first emerged in the 1970s introducing a brief, low-risk behavioural programme with a focus on enabling individuals to understand their behaviours and actions and understand how they can positively challenge them to increase their mood and well-being (Ekers et al., 2011; Richards et al., 2017). When applying BA, the individual is required to follow a manualised, linear programme allowing them to create positive goals in a sequential format. This allows the individual to see what they have completed and achieved at each period of therapy. The goals developed by clients can be broken down to ensure the individual can achieve them gradually and successfully without feeling the need to achieve the goal by the end of therapy (Lejeuz et al., 2001; Marwedel & Dubicka, 2014). Essentially the model works by implementing the core components: engagement with the model, understanding what BA is and how it can support the individual; goals/values, allowing the individual to understand what their aims are and what they would like to achieve; activity scheduling, to allow the individual to understand how useful schedules can be and what they can do if the schedule has been disrupted and finally dealing with avoidance, this ensures the removal of a vicious cycle and works on dealing with rather than maintaining the behaviour (Cuijpers et al., 2007; Kanter et al., 2010).

BA has been largely effective in the treatment of depression within the adult population as evidenced by rigorous research designs such as those involving Randomised

Controlled Trials (RCTs) (Jacobson & Gortner, 2000; Dobson et al., 2009; Ekers et al., 2011; Barth et al., 2013; Richards et al., 2017; Stein et al., 2020). For instance, Dimidjian et al. (2006) conducted an RCT comparing BA, CBT, and antidepressants as treatment methods for the treatment of depression. They found BA was just as effective as antidepressant treatment which were both more effective than CBT. This indicates the validity of BA as a stand-alone treatment for depression and showcases how it can be useful for an adult population. The usefulness of BA in the treatment of depression has been further highlighted by Richards et al. (2017) who found BA to be just as effective as CBT amongst the same population. Research around BA has also indicated how valuable it can be with different populations. Dimidjian et al. (2017) applied BA with pregnant women diagnosed with depression. This BA treatment group was compared to a treatment as usual (TAU) group. The results indicated reductions in depressive, anxiety, and stress-related symptoms. This indicates how valuable BA could be in reducing depressive and anxiety-related symptoms within a wider population. However, as the research was conducted over a three-month period in a face-to-face environment, similar results may not have been possible especially around COVID-19 where restrictions were enforced limiting face-to-face engagement.

Unprecedented times can be very traumatic for individuals leaving them with low mood and depreciated wellbeing (Mind, 2020). From 2019 until 2021 many individuals have reported mental health difficulties of some sort because of the COVID-19 pandemic. The Office for National Statistics (ONS, 2021) reported 1 in 5 adults experienced some form of distress in previous years which has doubled since the COVID outbreak in December 2019. With the increase in individuals experiencing mental health difficulties, services such as the NHS have become more strained due to staff shortages resulting in the increased need for support. The King funds report (2020) found that within the NHS workforce there was a

shortage of around 84,000 mental health and community support staff, in effect reducing the provision for support for those who require the mental health assistance.

As BA is a linear, manualised programme it can be easily explored by the practitioner and client both within and out of a session. However, there are very limited BA manuals available to consider and be trained in to effectively use BA. This criticism has been addressed by Lejuez et al. (2001) and Martell et al. (2010) who devised their individual BA manuals providing practitioners with an accessible framework to use and apply for BA therapy in practice. Similarly, Marwedel & Dubicka (2014) created a BA manual which can be explored with an adolescent population. They all place emphasis on increasing individuals' exposure to positive healthy behaviours to increase the likelihood of the behaviour being repeated and reducing the avoidance behaviours which is an essential element to allow positive change (Mazzuchelli et al., 2011; Ross et al., 2016). As a result, the use of BA could even be beneficial as an early intervention with the encouraged use of the strategies within school to motivate more positive behaviours. However, this process requires active engagement from the participant and if they do not engage with the programme, they are likely to not find BA therapy useful.

BA has been found to not only be an effective therapeutic approach but also a simplistic approach that can be delivered by non-specialists in the psychological field. This would reduce the burden from other practitioners allowing even mental health workers to help individuals who BA may be useful for. For instance, Drake et al. (2001) found it is not necessary only clinically trained specialists deliver BA in practice as even non-specialist staff can deliver the approach with ease and show understanding and sensitivity to their clients effectively (Ekers et al., 2011; Richards et al., 2017). This could allow the strain on clinicians to be reduced as mental health support workers may be able to deliver BA just as effectively. This could also translate into schools and other workplaces whereby a welfare staff member

could integrate BA strategies to promote well-being and encourage more healthy and positive work environments. Similarly, by conducting sessions online access to therapy may become more accessible. Research has indicated how valuable BA can be as an online therapy. Huguet et al. (2018) reviewed RCTs focusing on the effectiveness of BA as an online therapeutic approach and found BA to be just as effective as CBT in reducing depressive and anxiety outcomes at post-treatment. RCTs have also been conducted online comparing BA therapy to either psychoeducation or mindfulness. For example, Jelinek et al (2020) found online BA to be effectiveness in reducing depressive symptoms (O'Mahen et al., 2013; Ly et al., 2014, 2015). However, with majority of the participants being female who were already exposed to the therapy, bias effects could have created such a high effectiveness rate. Nonetheless, research does indicate the value of online therapy and could be an effective method in allowing more individuals to access, especially with the pandemic. This indicates not only the usefulness of BA as an online approach but also showcases the transdiagnostic approach BA could be whereby it can be used alongside CBT or as a standalone treatment as also evidenced by Chen et al. (2013). In effect, potentially the programme may be used as a tool individuals can use prior to starting therapy, whilst on the waiting list. Thus, it could be taken into consideration how BA could be placed within the NICE guidelines around CBT to increase general wellbeing prior to starting CBT therapy. This would not only inform individuals on how important engagement is within therapy but also how they can self-govern their wellbeing.

The Present Research/Paper

Due to the simplicity and cost-effectiveness of the BA approach the aim for the Professional Doctorate thesis was to first conduct a thorough Systematic Literature Review (SLR) to examine the current research surrounding BA. This was followed by a reflective methodology paper. And finally, an empirical paper, utilising the BA manual devised by

Marwedel & Dubicka (2014) which consists of 8 sessions as the primary researcher was trained in the manual for their MSc project. The sessions condensed to a single session to make it more brief, accessible and attainable as an online programme. The reason for the programme being online is to assess whether this BA manual can be effectively applied online as a single session and how useful it can be for the general population.

Prior to conducting the project guidance was considered via a webinar from Professor Windy Dryden who is a pioneer in single session therapy as well as the psychiatrists who created the manual to fully comprehend the core elements of the programme and how it could be successfully condensed to a single session. The study is conducted in the form of an RCT to understand how effective the BA programme is in contrast with a comparative control group. From conducting this project, evidence may support the current level of practitioner scarcity and overwhelming demand for mental health support, moving towards a provision for low-intensity interventions.

Aims

1. To conduct a thorough systematic literature review examining past and current research surrounding BA and psychological distress and how it has informed psychological practice.
2. To produce a reflective methodology paper
3. To produce a Single Session Behavioural Activation (SSBA) online programme using the Behavioural Activation manual devised by Marwedel & Dubicka (2014)
4. To examine the effectiveness of the SSBA programme in increasing general mood and well-being in comparison to a control condition
5. To understand the participants experiences of using the programme to make sense of the short-term data collection.

The following section will explore the Systematic Literature Review (SLR) examining RCTs exploring BA in the treatment of psychological distress

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Chapter 1: Systematic Literature Review

Is Online Behavioural Activation effective in treating Psychological Distress (anxiety and depression)?

Abstract

Purpose – Behavioural Activation (BA) is a brief and low-risk programme designed to provide individuals with structured guidance on how to explore their behaviours and challenge avoidance behaviours to achieve their desired goals. Research generally investigates BA in those experiencing depressive symptoms, a method shown to be effective in this group. However, limited research exists in those experiencing anxiety and as such psychological distress is the focus of this review encompassing both depression and anxiety.

Methods – A Systematic Literature Review (SLR) following the Preferred Register of Systematic Reviews and Meta-analyses (PRISMA) guidelines was conducted alongside the Critical Appraisal Skills Programme (CASP) to examine studies that had explored BA with psychological distress i.e., anxiety and/or depression. The reason a SLR has been considered in comparison to a meta-analysis is to emphasise whether online BA is effective despite the low number of studies and effect sizes (Garg et al, 2008). Of the 3855 studies identified, eighteen Randomised Controlled Trials (RCTs) met the inclusion criteria. Twelve used a treatment as usual group; two used mindfulness, and two single studies employed problem solving and blended BA in isolation. The electronic databases searched included: the Cochrane Library; MEDLINE; PsycINFO; PsycArticles; OVID; ScienceDirect and CINAHL. An independent researcher screened the titles, abstracts, reviewed the selected studies, and extracted the data.

Results – From the examined eighteen studies, results indicated an improvement in psychological distress symptoms, with the majority reducing the depressive symptoms significantly more than the control or comparative group. In addition to this online and face-

to-face BA study results indicated no significant differences suggesting the application of BA can be just as effective online as it is face-to-face.

Conclusions – Although the included indicated that BA was found to significantly reduce psychological distress versus the comparative group it was difficult to assess how useful the results would have been if the studies were continued for a longer-period of time. The exploration between BA and a comparative group may have also elicited different results if different age populations or gender populations were considered. Thus, there is a need to establish more rigour and reduce bias to establish and to confirm the effectiveness of BA for the treatment of psychological distress. Future studies should include larger sample sizes, longer follow-up periods and stronger methodological designs.

Introduction

This Systematic Literature Review (SLR) will focus on how BA has been examined in reducing psychological distress and whether it has been effectively applied with individuals both in a face-to-face and an online environment. This has become a necessity as we are globally facing the difficulties experienced during the COVID-19 outbreak and it has become more imperative to provide access to those who require the additional support in helping them cope with their mental difficulties (Mind, 2021). Thus, if BA can be effectively implemented it could be considered as a useful psychological intervention programme to support individuals who may not have access to other psychological treatment.

Psychological distress refers to non-specific symptoms of depression and anxiety (Viertio et al, 2021). Psychological distress is a leading mental health difficulty affecting many individuals across the world. The impact is ever increasing due to the COVID-19 outbreak. Jia et al (2020) conducted research in the UK during the first 6 weeks of social distancing measures to assess the increase in mental difficulties amongst adults. They found from a sample of 3,097 adults, during the first six weeks of social distancing 64% reported

symptoms of depression and 57%. Therefore, indicating how mental difficulties such as anxiety and depression have risen since the COVID-19 outbreak. This has been evidenced by research conducted by the Office for National Statistics who found 1 in 5 adults experienced some form of distress during this period which had doubled since the COVID outbreak (ONS, 2021). The level of anxiety and depression amongst individuals has been increasing over the past ten years as Kocalevent et al (2013) reported the mean levels of anxiety and depression have exceeded swiftly (Lowe et al, 2008; Warttig et al, 2013).

Due to the restrictions enforced, many support services had to move their services onto online platforms to continue to support individuals experiencing difficulties. This became a necessity as without online support it would have been difficult for individuals to access the support they required during this period. This has been evidenced by Mind (2021) and The Priory Group (2020) who have stated how useful this has been for individuals who have access to technology as a result expanding the avenues individuals can access to receive support (APA, 2017). However, this major shift has not only restricted many individuals seeking support as they normally would have been able to do in a face-to-face environment, but it has also created many barriers for those already experiencing mental difficulties.

According to charities such as Mind and OCD UK, individuals experiencing or diagnosed with psychological distress are having difficulty in their everyday lives as a result of the impacts of COVID-19 and the constant changes in regulation (Mind, 2021; OCD UK, 2020). For instance, Mind (2020) found 60% of adults and 68% of young people have said that their mental health has worsened during lockdown. This has been further supported by Fontenelle and Miguel's (2020) research exploring the impact of COVID-19 on the treatment and diagnosis of OCD and how difficult it has become for this population and state "there might be an increased number of individuals affected by anxiety and fear of COVID-19 infection in the next few months or even years" (p. 511).

As a result of the difficulties individuals have experienced due to COVID-19, it is imperative that individuals are still able to access the support they require regardless of the barriers introduced due to COVID-19. Despite restrictions being lifted at the time of writing this paper some individuals may find it more useful to access support via other mediums rather than face-to-face interactions, for example telephone or online as a result of becoming accustomed to the restrictions not permitting them to consider face-to-face interactions. Lerardi et al (2022) examined the effectiveness of therapy with university students both online and in a face-to-face environment before and during the COVID-19 pandemic finding online therapy to be almost as effective as face-to-face therapy. Research conducted by Chakrabarti (2015) suggests individuals receiving therapy via video report high levels of satisfaction. However, more research is required to make firm conclusions.

In terms of psychological distress, the primary psychological treatment is Cognitive Behavioural Therapy (CBT), this is also recommended by the National Institute of health Care and Excellence (NICE, 2021). However, as CBT is the most common psychological treatment it may have a long waiting-list for individuals to seek treatment (Rück et al, 2015). As a result, several researchers have moved towards other therapeutic interventions to identify what other treatments could be beneficial for the client-base. Behavioural Activation (BA) is a brief, low-risk behavioural intervention with a focus on the client's behaviours and how the client can ensure that they understand them and how they can positively change them (Richards et al, 2017). It incorporates a goal-oriented programme whereby clients follow a linear process to create and achieve positive goals (Lejeuz et al., 2001; Knittle et al, 2019). Several researchers argue that BA derives from CBT as the objective of BA is to increase positivity and reinforce these behaviours whilst simultaneously decreasing the intensity and frequency of the events that may cause the individual psychological distress. Dobson et al (2008) argues that the first part of CBT treatment is focused on behavioural change. To do

this it is important for the client to understand that their behaviour governs their thoughts and actions which is why BA is considered the first part of CBT treatment. However, Jacobson et al (2001) have argued that BA is a very distinctive and value-laden intervention by itself and has found to provide promising findings in reducing depressive symptoms. Despite BA first being introduced in the 1970s it was overshadowed by the effectiveness of CBT and the different components it involved (Beck et al, 1979; Jacobson et al, 2001).

BA derives essentially from behavioural theory, focusing on the element of learning through the process of conditioning (Skinner, 1938; Wilder et al, 1998). The core components of BA are: engagement with the model – to ensure the client effectively understands what is required of them and how they can use the model to address their needs; goals/values – this allows the client to understand their aims and achievements from using the model; activity scheduling – this is to effectively create an efficient routine to maintain positive thoughts and feelings, therefore doing activities they enjoy more often; dealing with avoidance – ensuring the removal of a vicious cycle and to work on dealing with rather than maintaining the behaviour or thought that has impacted them (Cuijpers et al, 2007).

With the ever-increasing need for alternative psychological interventions BA has gradually emerged again as an effective standalone intervention mainly explored within an adult population (Cuijpers et al, 2007; Ekers et al, 2011; Mazzuchelli et al, 2011; Ross et al, 2016). Lonezo-Luaces and Dobson (2019) found BA to be just as effective as CBT this could be as BA is understood to be a simplistic, brief, and cost-effective approach which can also be effectively applied by non-specialists. Thus, it may be useful to consider as a clinical approach. Ekers et al (2011) explored this as they conducted a randomised controlled trial (RCT) using BA applied by non-specialists to an adult population experiencing anxiety and/or depression. The non-specialists received training and their delivery of BA was compared to a control group of experienced practitioners also delivering BA. The results

showed little difference between the experienced practitioners and the non-specialist's effectiveness of delivering the approach. Similar results have been evidenced in further studies by Richards et al (2017) and Pass et al (2016) who explored the cost and utility of BA in comparison to CBT which found BA to be more accessible and time efficient. Therefore, considering the COVID-19 outbreak if required non-specialists can also deliver the intervention just as effectively as experienced practitioners. This should be a point to consider as with the increase in the number of individuals requiring support due to their mental difficulties this could be an avenue service providers can enlist and incorporate to support more individuals.

BA has largely been explored with a population of individuals experiencing depressive symptoms. This could be due to the process of BA allowing individuals to understand how their behaviours impact their emotions and mood. Veale (2008) states a similar point stating it could be that many depressive symptoms create low mood affecting our emotions and as a result targeting this first in treatment helps an individual understand how their depression is highly understandable and what they could do to reduce these symptoms. This has been supported by the meta-analysis conducted by Chan et al (2017) comparing BA with a control group. They found in the 7 different RCTs participants showed lower depressive and anxiety symptoms than the treatment as usual group and the groups that were receiving cognitive treatment. This indicates promising results indicating the usefulness of BA as an approach in reducing psychological distresses such as depression and anxiety. This could explain why BA is now essentially used as a standalone intervention as it helps individuals understand how they can positively reduce their depressive symptoms. Another aspect of BA that has been highly valued in research is the process of it being adapted to different client groups. For example, Mir et al (2015) adapted BA to be applied amongst Muslim individuals experiencing depression. They found the BA strategies that were

implemented were more valued by the individuals and as a result they did not feel they required a shared religious identity but instead an overall understanding. As a result, the intervention was found to be beneficial for the individuals and reduced their depressive symptoms overtime. However, as it was an adapted version of BA to engage primarily with the Muslim population, therapists did require more assistance in making sure the intervention was effectively delivered to the assigned group. Similar results have also been evidential in Armento et al (2012) study where they adapted BA to assist in the treatment of depressive symptoms in college students with religious beliefs.

On the other hand, very little research has been conducted in relation to BA in the treatment of anxiety. Hopko et al (2016) looked at the efficacy of BA in treating anxiety in breast cancer patients. They found that 41% of patients had significantly reduced anxiety levels suggesting that BA can also be effective in a clinical sample of individuals experiencing anxiety. However, there was no control group comparison, so it is difficult to determine whether BA effectively reduced the patient's anxiety levels. In addition to this, most of the clients had comorbid depression which could suggest why BA may have been more beneficial for the population due to the vast research suggesting the effectiveness of BA with individuals experiencing depression. Therefore, due to the limited research with BA and anxiety it seems as though anxiety has been overlooked and as BA has been effective in reducing depressive symptoms it has been considered as a valuable intervention to be used with this population only. However, due to the COVID-19 outbreak anxiety levels have also increased. Panchal et al (2021) found that around July 2020 in the United States 4 in 10 adults reported symptoms of anxiety and from January 2019 this has risen nearly four times suggesting how prevalent the need for support is for those experiencing anxiety.

The need to conduct the SLR is to understand what research has found in relation to the effectiveness of BA within a population experiencing psychological distress. Considering the

barriers of social distancing and travel restrictions caused by the COVID-19 lockdown it is important to understand how the population has been affected and how service providers can support the population by introducing brief yet effective psychological treatments despite the restrictions they have to face. Therefore, the aim of the SLR is to identify and evaluate the research that has been conducted in relation to the effectiveness of BA in RCTs and to identify whether it can also be effectively applied to individuals experiencing psychological distress. In addition, a secondary aim is to examine if BA is effective in an online platform and how these results contrast with BA delivered face-to-face. The specific aims are:

1. Explore whether BA is effective in treating psychological distress, i.e., anxiety and/or depression.
2. Identify if BA is on an online platform in contrast to face-to-face delivery of BA.
3. Explore whether BA is more effective than the comparison group in an RCT.

Methodology

An RCT is essentially an experimental design incorporating an intervention and control group whereby individuals are randomised to either the intervention or control group to identify the effectiveness of the intervention against treatment as usual (Straus and Sackett, 1998). The individuals are unaware of the condition they are part of and usually the researchers are unaware of this as well to ensure the process has a low risk of bias (Chess and Gagnier, 2013). Akobeng (2005) argues that RCTs are the most "rigorous method of hypothesis testing….and the gold standard…for evaluating the effectiveness of interventions (p.840)." Therefore, in this SLR the purpose of using RCTs is to find evidence exploring the usefulness of BA and how it is supported by rigorous research in establishing how BA can be effective for individuals experiencing depressive or anxiety-related symptoms. Exploring RCTs would ensure the minimisation of any risk of bias or extraneous variables on the results, indicating the high validity the results would produce in showcasing the effectiveness

of the approach (Christensen et al, 2004). Thus, the significance is to understand how BA could be more effective for individuals experiencing psychological distress and how it can be tailored to be accessible to individuals experiencing anxiety related difficulties just as well as individuals experiencing depression.

Search Strategy

The systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) checklist (Appendix 2). The following electronic databases were used for the literature search: the Cochrane Library; MEDLINE; PsycINFO; PsycArticles; OVID; ScienceDirect and CINAHL. The search was also conducted on Google Scholar. Grey literature was sourced through news articles and letters around the psychological field such as the British Association for Counselling and Psychotherapy (BACP) monthly newsletters. The literature search terms used for the electronic databases including any Boolean operators, truncation and wildcards were Behavio* Activation; Psychological Distress; Anxiety and Depression. These have been further explained in Appendix 3. All searches were conducted between April and July 2021. No limits were used to the searches, whereby no restrictions were put on the dates the articles were published and the language the articles were in. Thus, some articles appeared in a foreign language which were translated using Google Translate and analysed in the English format. The reason for this was to make sure that all possible findings were considered making the SLR multi-faceted and validated.

Study selection criteria

The following study design was included: experimental studies i.e., Randomised Controlled Trials. Research protocols, case studies, observational studies, commentaries and neurological studies, and non-interventional studies were excluded.

Participants - (i) adults aged 18 and over (ii) experiencing psychological distress i.e., depression and/or anxiety.

Included studies were those examining both face-to-face and online effects of BA on psychological distress. The purpose of this was to assess whether one was more beneficial than the other and how this could help in understanding how to effectively apply BA. The term Behavioural Activation was included in the title with psychological distress i.e., anxiety and/or depression being the purpose for the use of BA. Therefore, the titles of the research studies or reviews included BA and psychological distress/anxiety/depression eliciting that these terms were the focus of the study. Empirical and Review studies have also been considered in this review to allow a more thorough understanding of the effectiveness of BA.

Excluded study characteristics

Participants with cognitive or neurological impairment. Interventions focused primarily on CBT Interventions not including a comparative group; Interventions where Randomised Controlled Trials were not implemented and Mental disorders others than psychological distress explored for treatment

Study Selection

The titles and abstracts were retrieved by electronic searches and were exported to the reference management software Endnote. After duplicates were removed the independent researcher screened the exported titles and abstracts with the support of the online software tool Covidence. Studies were excluded as they did not meet the inclusion criterions. Full-text screening began, further exclusions were made. Reasons for the exclusion are included in the PRISMA flow diagram (Figure 1).

Outcomes

Primary outcomes in the studies were: (a) BA effectiveness in reducing depression and/or anxiety, which were assessed via questionnaires and (b) reduction in depressive and

anxiety symptoms. Secondary outcomes were: (a) treatment adherence and retention and (b) longer term maintenance of treatment effects.

Data extraction and analysis

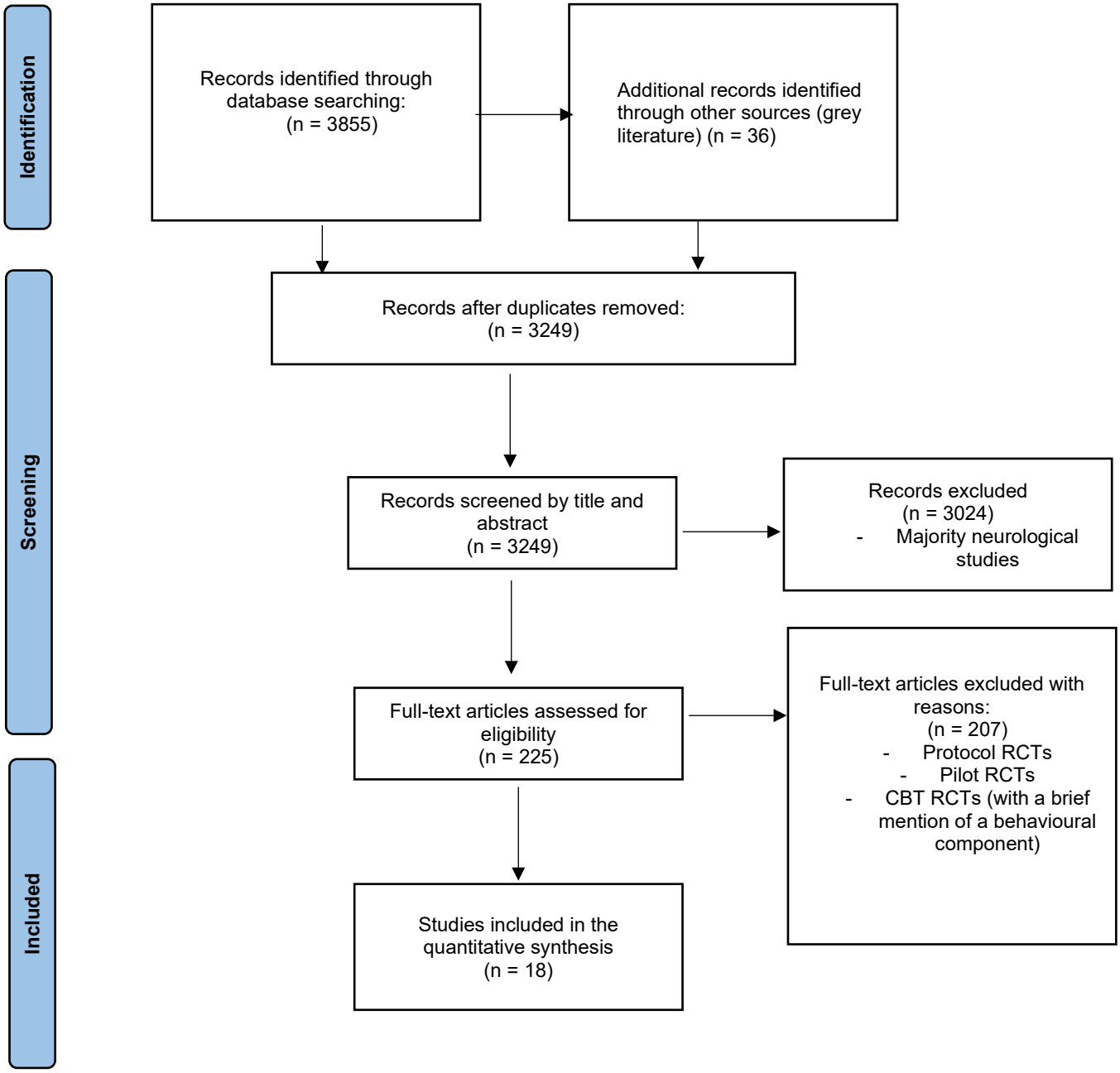
Data was extracted independently using hand notes and Microsoft Excel 2016 which included the title, author, year, and brief sections of the findings, strengths, limitations and evaluation of the study. The information noted included the treatment type (online or face-to-face); depression and/or anxiety outcomes; length of the sessions; participant numbers and any other findings from the studies.

The data extraction first began after completing the initial search. The PRISMA (Page et al., 2020) flow diagram was incorporated to produce a clear understanding of what steps were taken at each stage during the extraction period (Figure 1). In addition to this the Critical Appraisal Skills Programme (CASP) (2020) (Appendix 4) was used to assess whether the studies met the inclusion criteria of being an RCT and whether the RCTs were conducted effectively. This tool has been specifically designed to help understand the usefulness of the RCTs considered.

Assessment of risk of bias

The methodological quality of RCTs was formally assessed using the Cochrane risk of bias tool (Higgins et al, 2011). The purpose of doing this was to make sure that the methodological choices made in the studies were important to conduct a value-laden and rigorous study. This tool categorises risk as ‘high’, ‘low’ or ‘unclear’. It includes seven domains: (a) selection bias (random sequence), (b) selection bias (allocation), (c) reporting bias (selective/ reporting), (d) other bias (other sources of bias), (e) performance bias (blinding participants and researchers), (f) detection bias (outcome assessment) and (g) attrition bias (incomplete outcome data).

Figure 1.1 *PRISMA flow diagram enlisting the process of searching; selecting and screening the studies to meet the eligibility criteria to be used in the review*



Results

A total of 3891 studies were identified through the electronic database and the use of grey literature. After duplicates were removed 3249 studies were found. Once titles and abstracts were screened 3024 studies were excluded. A total of 225 studies were selected for full-text screening. Finally, a total of 18 studies met the inclusion criteria and are included in the review (Figure 1).

Study characteristics

A complete description of the study characteristics is provided in Table 1.1. Of the 18 included studies: Twelve used a treatment as usual group; two used mindfulness, and two single studies employed problem solving and blended BA in isolation. All the studies have baseline, pre and post intervention findings. All included studies were published between 2010 and 2021 with the majority being conducted in the United States, United Kingdom and across Europe. Table 1 clearly states the aim and identified sample for each study. Participant demographics were not as adequately detailed in all the studies. The sample sizes ranged from 30 to 961 participants (Gawrysiak et al, 2009; O'Mahen et al, 2013). All studies included described data in relation to the validity and reliability of the assessment measures used.

Table 1.1 *Characteristics of studies included*

Author /Year	Study type	Setting and country	Intervention	Aim	Inclusion criteria	Sample characteristics	Strengths	Limitations	Evaluation
Arjadi et al (2018)	RCT (Online)	UK	BA vs Psychoeducation	To compare the outcome of BA vs Psychoeducation in reducing depressive symptoms	16 or older Score 10 or above on PHQ-9 scale Meet criteria for major depression Could use the internet	313 participants Mean age 24 years old Majority were females	BA found to be effective in reducing depressive symptoms	Technology difficulties – restricted on mobile Researchers unblinded from week 10 which could have introduced bias Lack of generalisability due to only	BA found to be effective however more research is required to verify the findings as the population was not generalisable

								being in one city Attrition rates higher in the BA group	
Armento et al (2012)	RCT	USA	BA tailored to religious behaviours, single session	To identify whether BA tailored to religious behaviours increase religious affiliation and decreases	University students Depressed Affiliated with a religion	College students 50 participants Mean age 20 31 Females 19 Males	Use of a range of practitioners to review and analyse the content reducing bias	Limited diversity as only university students Extraneous variables over the 2 weeks from the single session to the analysis	Overall, the study found effective findings for a brief BA intervention which reduced depressive symptoms

				depressive symptoms				Longer follow-up could have been considered for more valid results	
Dimidjian et al (2017)	RCT	USA	BA vs TAU	To compare the outcome of BA and Treatment As Usual (TAU) in reducing depressive symptoms in pregnant women	Pregnant women Diagnosed with postnatal depression	163 participants Females Mean age 29	The tailoring of BA to pregnant women and the effectiveness found	Limited findings from the control group Relied more on self-report measures rather than assessing clients for	BA found to be useful in reducing depressive symptoms in pregnant women

								major depressive disorder	
Gawrysiak et al (2009)	RCT	USA	BA single session	To identify whether BA tailored to university students decreases depressive symptoms	University students Depressed	30 participants 24 Females 6 Males Mean age 18	The application of a single session being effective for the population	Lack of follow-up data Only assessed via self-report measures	Brief interventions can be just as effective as long-term interventions in reducing depressive symptoms
Funderburk et	RCT	USA	Brief BA	To compare the outcome of BA	Veterans	140 participants 128 Males	6 months follow up to understand the	Lack of generalisability	Brief intervention

al (2021)				and TAU in reducing depressive symptoms in veterans	Moderate depression	12 Females Mean age 53	effectiveness of the approach long-term	Lack of engagement in the TAU group	s can be just as effective as long-term interventions in reducing depressive symptoms
Hopko et al (2011)	RCT	USA	BA single session	To identify whether BA tailored to breast cancer patients decreases depressive symptoms in	Breast cancer patients Moderate depression	50 participants Females Mean age 55	BA being tailored to the population	Longer follow-up could have been considered for more valid results	Brief interventions can be just as effective as long-term intervention

				comparison to problem-solving therapy					s in reducing depressive symptoms
Moradveisi et al (2013)	RCT	UK	BA vs Antidepressants	To compare the outcome of BA and antidepressants in reducing depressive symptoms	Major depressive disorder 19 or more on the Beck inventory 14 or more on the Hamilton scale	100 participants Adults 18–70-year-olds Females	Long-term benefits of the effectiveness of BA Can be effectively applied in a non-western country	More research is required to assist with the intervention being applied in more non-western countries	BA can also be effectively applied in a non-western country and tailored to their beliefs and values

Jelinek et al (2020)	RCT (Online)	Canada	BA vs Mindfulness	To compare internet delivered BA to Internet delivered mindfulness incorporated BA in reducing depressive symptoms	Internet access and literacy PHQ score of 4 or more Age between 18 and 65 years Informed consent	104 participants Majority females Mean age 45	Internet based BA found to be effective in reducing depressive symptoms	Bias effects as participants may have experienced the therapies before Lack of generalisability as 75% of participants were female however, the majority experiencing depression are female	BA can be effectively applied on an online platform and used to reduced depressive symptoms

Ly et al (2014)	RCT (Online - smartphone)	UK	BA vs Mindfulness	To compare internet delivered BA to Internet delivered mindfulness in reducing depressive symptoms	18 or older PHQ score of 5 or more No recent psychological treatment No risk of suicide	81 participants Mean age 36 – 20 to 61 years 57 Females 24 Males	BA found to be effective among individuals experiencing high severity of depression	No control group which may have elicited different results Participants recruited via media so not sure if it would be effective in a clinical setting as well Majority were college/university educated so	BA can also be effective in reducing high levels of depression

								may have been aware of the purpose of the study	
Ly et al (2015)	RCT (Online - smartphone)	USA	BA vs blended online	To compare a blended online and face-to-face BA to face-to-face BA in reducing depressive symptoms	18 or older PHQ score of 5 or more No recent psychological treatment No risk of suicide	93 participants Ages between 18-73 years 65 Females 28 Males	Blended treatment of online and face-to-face BA also found to be just as effective as face-to-face BA alone.	Requirement of further evidence to substantiate the results No control groups Requirement of a larger sample size to validate the results	A blended treatment requiring more input from the client can be just as effective as face-to-face interactions

Saisanan Na Ayudhaya et al (2020)	RCT	New Zealand	BA	To compare older Thai adults receiving BA to a control group in reducing depressive symptoms	Thai adults experiencing depression	41 adults Ages > 18	BA found to not only be effective in reducing depressive symptoms but also in reducing stress and anxiety	Could have considered the long-term effects with a more diverse population	BA is not only effective in reducing depressive symptoms but can also reduce anxiety levels in the long-term
Macpherson et al (2010)	RCT	USA	BA tailored to smoking abstinence	To compare adult smokers in developing abstinence as a result of BA and	Adults Smokers Mild depression	68 participants Ages between 18 -65 years 50% Male and 50% Females	BA effectively reduced the level of depressive symptoms in participants	Lack of diversity Recruitment issues – lack of	BA not only helps in reducing depressive symptoms

				decreasing depressive symptoms in comparison to standard therapy				internal validity	but can also increase smoking abstinence
Zabihi et al (2020)	RCT – Systematic Review	UK	BA	11 trials that took place in USA, Australia, Hong Kong and Spain in understanding the effectiveness of BA vs control in reducing depressive symptoms	RCTs of BA vs TAU	815 participants across the studies Majority of the studies mainly had females Ages 21-81 across the studies	From the trials included in the study effective results were found for BA in reducing depressive symptoms	Researchers possibly could have missed research	BA found to be effective in reducing depressive symptoms in a range of RCTs

Sun et al (2018)	RCT	USA	BA vs Mindfulness vs TAU	To compare internet delivered BA with mindfulness and TAU in reducing depressive symptoms	18 or older PHQ score of 9 or more Could speak Cantonese	231 participants 93% females Age > 18	BA can also be effectively used alongside mindfulness in reducing depressive symptoms	Used public primary care so may not be validated in a clinical setting	BA can also be effective in reducing high levels of depression
Xie et al (2019)	RCT	UK	BA with Mindfulness	To compare BA with mindfulness to a control group in reducing depressive symptoms	GDS score between 11 and 25 Elderly	73 participants More females Ages > 18	BA found to be effective also amongst an elderly population	Only 73 completed the intervention	BA can also be effective in reducing high levels of depression

O'Mahen et al (2013)	RCT (Online)	Netherlands	BA tailored to post-natal depression	To compare internet delivered BA tailored to postnatal depression to TAU in reducing depressive symptoms	Women recruited via netmums (parenting site)	961 women Volunteer sampling Online	Found to be effective in reducing post-natal depression	High attrition rates Women reported struggling to "keep up" with the treatment	BA can be effectively applied on an online platform and used to reduced depressive symptoms
Takagaki et al (2016)	RCT	Germany	Brief BA	Brief BA in comparison to the control group in reducing depressive symptoms	Late adolescents Moderate depression	18–19-year-olds 118 participants	BA also found to be effective in late adolescents	Limited population only 18–19-year-olds Lack of follow-up to identify	Brief interventions can be just as effective as long-term intervention

								whether BA could have had long-term effects	s in reducing depressive symptoms
Huguet et al (2018)	RCT	USA	Online BA compared with physical therapy, psychoeducation and mindfulness	Online BA compared with physical therapy, psychoeducation and mindfulness in reducing depressive symptoms	Adults Moderate depression	2157 participants	BA found to be non-inferior in reducing depressive symptoms in adults	2157 participants. Lack of follow-up and results are very poor quality due to weaknesses in data collection and recruitment	Online BA can be just as effective as in reducing depressive symptoms as face-to-face.

Methodological quality assessment

Overall, the studies received a methodological rating between high and low risk of bias, with the studies of O'Mahen et al (2013) and Jelinek et al (2020) high in performance bias; Arjadi et al (2018) high in attrition bias and Ly et al (2015) and Zabihi et al (2020) high in detection bias. The quality assessment ratings for each specific criterion and the assigned global ratings are reported in Table 1.2. The study methodology was the primary strength of the studies as they were thoroughly explained with recruitment and data collection as the main weaknesses with some studies having high attrition rates. The reason for recruitment and data collection being the weakness was due to data being collected from the researchers own website therefore indicating participants could have been encouraged more to take part in the projects. However, in relation to study design only two studies had researchers who were blind to the conditions but, after a ten-week period the blinding of researchers was removed which could have introduced a risk of bias (Arjadi et al, 2018; Armento et al, 2012). Additional areas of possible methodological biases could have been a result of reporting bias as mentioned in Table 2. For instance, not reporting all the outcomes of the studies, using just self-report measures as a mean to assess for psychological distress (Gawrysiak et al, 2009; Moradveisi et al, 2013; Dimidjian et al, 2017).

Table 1.2. *Ratings of methodological quality by the Cochrane Risk of Bias Assessment*

Author/Year	Selection Bias (1)	Selection Bias (2)	Reporting Bias	Other Bias	Performance Bias	Detection Bias	Attrition Bias
Arjadi et al (2018)	Low	Low	Low	Low	Low	Low	High
Armento et al (2012)	Low	Low	Low	Low	Low	Low	Low

Dimidjian et al (2017)	Low	Low	Low	Low	Low	Low	Low
Gawrysiak et al (2009)	Low	Low	Low	Low	Low	Low	Low
Funderburk et al (2021)	Low	Low	Low	Low	Low	Low	Low
Hopko et al (2011)	Low	Low	Low	Low	Low	Low	Low
Moradveisi et al (2013)	Low	Low	Low	Low	Low	Low	Low
Jelinek et al (2020)	Low	Low	Low	Low	High	Low	Low
Ly et al (2014)	Low	Low	Low	Low	Low	Low	Low
Ly et al (2015)	Low	Low	Low	Low	Low	High	Low
Saisanan Na Ayudhaya et al (2020)	Low	Low	Low	Low	Low	Low	Low
Macpherson et al (2010)	Low	Low	Low	Low	Low	Low	Low
Zabihi et al (2020)	Low	Low	Low	Low	Low	High	Low
Sun et al (2018)	Low	Low	Low	Low	Low	Low	Low
Xie et al (2019)	Low	Low	Low	Low	Low	Low	Low
O'Mahen et al (2013)	Low	Low	Low	Low	High	Low	High
Takagaki et al (2016)	Low	Low	Low	Low	Low	Low	Low

Huguet et al (2018)	Low	Low	Low	Low	Low	Low	Low

Effectiveness of BA in depression outcomes

Intervention summary and descriptions of the findings and effectiveness of BA and depression outcomes are reported in the Appendix 4. A range of variants of BA processes were used in the studies such as BA tailored to religious behaviours and how individuals can be confident in expressing their religious views (Hopko et al, 2012); smoking abstinence (Macpherson et al, 2012); pregnant women (Dimidjian et al, 2017); post-natal depression (O'Mahen et al, 2013); breast cancer patients (Hopko et al, 2011) and veterans (Funderburk et al, 2021). Participants were largely recruited via the media, primary care, college/university (Gawrysiak et al, 2009; Hopko et al, 2011; Hopko et al, 2012; Macpherson et al, 2012; O'Mahen et al, 2013; Ly et al, 2014; Ly et al, 2015; Dimidjian et al, 2017; Arjadi et al, 2018; Jelineck et al, 2020; Funderburk et al, 2021). The following assessments were used to assess depression outcomes: Beck Depression Inventory (BDI) - which was used most frequently; Patient Health Questionnaire (PHQ) and the Hamilton Depression Rating Scale (HDRS).

Twelve studies used a control/Treatment As Usual (TAU) group (Gawrysiak et al, 2009; Armento et al, 2012; Macpherson et al, 2012; Moradveisi et al, 2013; O'Mahen et al, 2013; Takagaki et al, 2016; Dimidjian et al, 2017; Xie et al, 2019; Jelineck et al, 2020; Saisanan Na Ayudhaya et al, 2020; Zabihi et al, 2020; Funderburk et al, 2021); Two used psychoeducation as a comparative group (Arjadi et al, 2018; Huguet et al, 2018); One used Problem-Solving Therapy (PST) (Hopko et al, 2011); Two used Mindfulness (Ly etal, 2014; Sun et al, 2018) and one used a blended treatment of BA – online and face-to face (Ly et al,

2015). Attrition was reported for all studies ranging from 5% (Hopko et al, 2011) to 38% (O'Mahen et al, 2013).

In terms of effectiveness, fifteen out of eighteen studies reported a positive outcome for BA in terms of reducing depressive symptoms (Gawrysiak et al, 2009; Armento et al, 2012; Macpherson et al, 2012; Moradveisi et al, 2013; O'Mahen et al, 2013; Ly et al, 2014; Takagaki et al, 2016; Dimidjian et al, 2017; Arjadi et al, 2018; Huguet et al, 2018; Sun et al, 2018; Xie et al, 2019; Jelineck et al, 2020; Saisanan Na Ayudhaya et al, 2020; Zabihi et al, 2020;). Only three studies were found to have no significant difference between BA and the TAU or comparative group (Hopko et al, 2011; Ly et al, 2015; Funderburk et al, 2021). In addition to this online and face-to-face BA study results indicated no significant differences suggesting the application of BA can be just as effective online as it is face-to-face.

Effectiveness of BA in anxiety outcomes

Four out of the eighteen studies reviewed also found BA to reduce anxiety levels when this was not the primary focus of the study (Hopko et al, 2012; Dimidjian et al, 2017; Hugeut et al, 2018; Saisanan Na Ayudhaya et al, 2020). This suggests that BA could also be effective in reducing anxiety levels despite the focus of the treatment being to treat a comorbid mental difficulty. The research papers were assessed against the CASP RCT checklist which is examined further in Appendix 4.

Discussion

Overall, the majority of the RCTs in BA in comparison to TAU or a comparative group indicate a sufficient effectiveness level of BA in the treatment of reducing psychological distress. This also coincides with depressive symptoms being reduced in connection to other behaviours such as religious beliefs (Hopko et al, 2011) and smoking abstinence (Macpherson et al, 2012). BA had a varied effect size between small and large in the studies where effect sizes were calculated (d = 0.32-1.5). Most studies reported significant differences between the comparative or TAU group against BA with BA producing more reductions in depression symptoms. Additionally, some studies also found that BA also reduces anxiety and stress levels whilst also increasing QoL (Armento et al, 2012; Takagaki et al, 2016; Dimidjian et al, 2017; Funderburk et al, 2021). But the increase in QoL was not very clear and prominent in the papers. Therefore, there are questions as to why there are only eighteen RCTs that explore the effectiveness between BA and depression, and why the relationship between BA and anxiety was not explored further. Thus, suggesting the increased need to conduct further RCTs to produce more validated results especially in terms of the effectiveness of the intervention in the reduction of anxiety levels. For this reason it is important to inform researchers and practitioners on the value of BA and the implications within a clinical setting.

BA and Anxiety

Despite this, there is still limited presence of BA and the effectiveness of the intervention in the treatment of anxiety. This limitation has been highlighted by many researchers including Hopko et al (2016) in terms of the effectiveness of the approach with individuals experiencing depression and have coexistent anxiety research does indicate valuable findings. For instance, Armento et al (2012) considered the application of BA tailored to a college population and found that their depressive symptoms and anxiety levels

were significantly reduced. The recent interest in BA has raised more awareness in the intervention, indicating it could be used on a more widespread scale (Dimidjian et al, 2011). For this to be effective more research needs to be considered.

BA Accessibility

Taking into consideration the impact of the COVID-19 restrictions it has been difficult for individuals to seek support in a face-to-face environment. However, similar to CBT, BA can also be delivered effectively online. Huguet et al (2018) looked at the effectiveness of BA as an online therapeutic approach using a RCT. They found BA to be more effective in reducing depressive symptoms than other programmes such as psychoeducation, physical therapy and mindfulness. They also found BA to be just as effective as other forms of CBT. This suggests individuals can autonomously access and undergo a BA intervention in their own homes and reduce any time or any restrictions preventing them from accessing the intervention. This has also been evidenced in research conducted by Arjadi et al (2018) who found that in comparison to psychoeducation BA reduced participants depressive symptoms more significantly. Additionally, the studies of BA included in the review which were conducted online show similar results to those conducted in a face-to-face environment with a therapist. This may be due to the simplicity of BA and how it can be understood and explored by an individual in their free time. But could also be due to the fact by doing BA independently individuals feel more self-governing rather than being told what they could do by a therapist.

Review implications

From conducting the review, it is evident that BA may be considered as an effective intervention in the treatment of depressive symptoms. This may be due to BA being a more simplistic approach primarily allowing the individuals to focus on how their behaviours connect with their emotions and feelings. This is possibly why more research has been

conducted with a population experiencing depression as positive emotions would help introduce positive behaviours decreasing an individual's mood (Veale, 2008). However, it has also allowed a profound understanding of how BA can also alleviate symptoms of anxiety and stress. The National Alliance on Mental Health (NAMI, 2018) argue that 60% of those experiencing anxiety will also be experiencing depression. Thus, suggesting if an individual is experiencing both depressive and anxiety symptoms these can be reduced by effectively applying a BA intervention to address their needs.

Due to the COVID-19 outbreak many research studies have been conducted online to assess the need for additional mental health support during the pandemic (Lorenco and Tasimi, 2020). The studies in this review that were conducted on an online platform yielded effective results showcasing the benefits of conducting a BA informed intervention online allowing more individuals to access and apply in the comfort of their homes. This allows the understanding that BA does not necessarily have to take place in a controlled environment such as a therapist's clinic or even with a therapist, raising the question of the value of the therapeutic alliance in BA. However, many had unclear detection bias whereby it was unclear whether the study was completed blinded or whether the blinding of researchers was removed after a certain period of time. This was evident in Arjardi et al (2018) whereby they mentioned the blinding of researchers was removed after ten weeks but other studies failed to mention anything to suggest otherwise. Also, there was high attrition rates in both Arjardi et al (2018) and O'Mahen et al (2013) studies. Both these studies were conducted online so possibly due to the long duration of the studies individuals felt it was easy to drop-out of the studies. Additionally, there could be other factors such as the privacy of their home or workplaces which could have limited their participation. Schneider et al (2014) explored the acceptability of online self-help in workplaces and found only 60% engaged and found online therapy just as appropriate to face-to-face therapy, highlighting intrinsic and technical

difficulties as barriers to engagement. Despite this, research conducted by Carroll et al (2021) indicates therapists perceive online therapies as more helpful than non-specific therapies for long-term conditions.

Limitations

There are several limitations to this review. The review criteria had to be changed multiple times: initially the empirical study had been changed towards the start of 2021 as it was not feasible in a lockdown environment with the new empirical study only being finalised in May 2021. The original review was to be conducted around BA and the application with an adolescent population in school governed by trained Special Educational Needs teachers. This then changed to explore individuals with Obsessive Compulsive symptomology and how BA can be applied with the population on an online platform. This again had to change to simply explore the effectiveness of BA with individuals experiencing psychological distress due to the lack of engagement with the previous projection and limited period to conduct the project; secondly the review question had to be changed as after conducting an SLR there was very limited research around anxiety and BA. As a result of this, the review question was broadened to incorporate depression to identify the effectiveness of BA in the treatment of psychological distress which includes both anxiety and depression, this resulted in the review being conducted all over again. Due to these persistent difficulties the review was conducted within a very short period of time and was only conducted by one reviewer which could have increased the possibility of missing information and the increase of bias. The reviewer did, however, spend many weeks reading over the papers after the duplicates were removed to make sure relevant information was included in the review. In addition to this, many research papers were excluded as they were not RCTs. This may have resulted in more valid data in understanding the pre and post benefits of BA, but it may have reduced the credibility of BA as qualitative studies may have

introduced more open findings of how BA could have facilitated the reduction in depressive symptoms. To explain, in qualitative research more findings could have been explored such as how useful the participants found the programme and what they would have changed. This could have indicated the usefulness of the approach in more detail eliciting more valuable results.

Another limitation could be the primary focus of studies being tailored to behaviours such as smoking or religious attitudes with depression as the secondary outcome. Thus, it may be hard to distinguish between the elements of BA being effective for the treatment of smoking abstinence or depressive symptoms. Finally, for most of the studies in particular the internet-based BA studies very limited information was provided on the delivery of BA on the platforms. This would have been a very important factor in determining what aspects of BA are more appreciated by individuals and what factors seem to reduce the depressive symptoms. However, the majority of the research did include follow-up data so this should be an element that should be continued within these studies to ensure their effectiveness.

Recommendations

Future research should consider a more open approach in addressing BA in reducing depressive symptoms. For instance, if the intervention is to be delivered online, the manual used, and the format of the BA intervention should be explained in the study. Additionally, the majority of the studies only had a 4 week to 6-month follow-up period, this could be increased to at least a year to identify the long-term benefits of the intervention. Also, it may be beneficial to approach a range of organisations and charities that provide information to support individuals with mental difficulties as these individuals can also hopefully access BA and identify whether it would be beneficial for them.

Conclusions

To conclude, this review was conducted to examine whether BA is effective in treating anxiety-related or comorbid disorders. Eighteen studies (all experimental RCTs) met the inclusion criteria and were included in the review. The results provide useful evidence indicating BA could be an effective intervention in the treatment of depression whilst also treating anxiety levels. But the conclusions regarding anxiety are based on limited RCTs. Several methodological difficulties and researcher bias have been identified in the studies therefore the results need to be considered with caution after reading the studies. Future studies should include larger sample sizes, longer follow-up periods and stronger methodological designs. These limitations should be addressed in further research in this field. For instance, research can be conducted to explore the usefulness of BA as an online programme to help understand how individuals may attend to the intervention and whether it can be successful in reducing psychological distress.

Chapter 2: Methodology Paper

The methodology paper is reflective, exploring and critiquing my methodological choices and actions. Reflectivity is a process whereby individuals are able to reflect, appraise and critique experiences and choices and help understand how they could have potentially considered another perspective or what may have gone well (Finlay, 2003). It is particularly useful when trying to understand developments if another method was considered. Likewise, it also helps in understanding how we can develop and continue using strategies that have been useful. Thus, this approach will be considered in this paper to examine and critique the research and what could have been improved. The paper has not utilised a reflective model as the researcher wanted to ensure the reflections were more free-flowing and unconstrained by a framework that might encourage hindsight bias (Fessel et al, 2009; Coward, 2011). The purpose of this paper is to allow fellow researchers to understand the difficulties in conducting research in restrictive circumstances such as the COVID-19 pandemic, and in particular how demanding the recruitment process can be in such restraining circumstances. Therefore, suggestions will be made on how to overcome similar difficulties in future studies in this area of research to prevent such difficulties from re-emerging. The paper will begin with the rationale of the project, leading to the description of the methodological choices made and why they were suitable for the objectives of the research project. This will be followed by the difficulties obtaining ethical approval and recruitment leading to why it was important to conduct a randomised controlled trial (RCT). The paper will end with suggestions to consider for future research and a summary of how the changes in the methodological findings affected the research project.

Rationale

The aim of the research project is to examine the effectiveness of a Single Session Behavioural Activation (SSBA) programme in increasing general mood and wellbeing with a

control condition focused on mindfulness. Behavioural Activation (BA) is a brief and low-risk psychological programme which allows the individual to govern their own behaviours and actions. An approach that has been found to be largely effective within the adult and adolescent population (Richards et al, 2017; Dubicka et al, 2022). For example, research conducted by Ekers et al (2011) found that due to the simplicity of BA it can be conducted by non-specialists allowing more individuals to access the programme. For this project the purpose is to explore BA further but tailoring it to an online platform where the individual would complete the programme independently. Thus, the focus is on goal setting and how the individual can change their behaviours to achieve their goals, with minimal guidance from a practitioner. The intention of the programme being online is to allow more individuals access to the programme without needing to leave their homes. Due to COVID mental health support has become more imperative, thus with the programme being accessible online it would allow a wider community to access the support much sooner in contrast to waiting to receive face-to-face support. The present research utilised the BA manual devised by Marwedel and Dubicka (2014) which consists of 8 sessions as the primary researcher was trained in the manual for their MSc project which focused on the production of a feasibility paper which was conducted by assessing the reliability of the manual (Dubicka et al, 2022). As a result, they felt confident in exploring the manual further and utilising it to identify whether it can also be effectively applied on an online platform. Applying the manual online became a necessity due to the difficulties of face-to-face restrictions. The purpose of applying BA online will be explored further as the paper progresses.

Objectives

The following are the objectives of the research project which have changed overtime as the project had transformed to be more suited during the COVID-19 outbreak. The original objective was to explore the effectiveness of BA in a school environment where BA would be

delivered by trained Special Educational Needs (SEN) teachers. Due to schools having to close because of the lockdown the original study had to be changed to allow participants to take part in the study via more accessible means such as being able to access the programme online. However, taking into consideration the population of young people it would have been difficult to receive consent from parents/guardians and the delivery of the programme by SEN staff could have also been very difficult. Due to this, the project was designed to facilitate an older population who may have been impacted by the COVID-19 restrictions and the parameters they had to follow because of the outbreak. The purpose of restricting the sample to an older population was primarily as the individuals can consent for the research themselves (Sugarman et al, 1998). Ethical approval was obtained for the study after five attempts due to the ethical issues that may arise when working with an obsessive-compulsive disorder (OCD) population such as symptomology and clinical diagnosis. This population was originally chosen in consideration of the impact the COVID-19 pandemic measures would have had on individuals experiencing OCD, as such they were seen as an at-risk group in need of study (Fontenelle and Miguel, 2020). As a result, the study was changed once again to focus on a population that have experienced anxiety. However, despite the project being advertised on charities providing individuals with support to cope with their anxiety there was little engagement with the study. This could be due to limited engagement with the charities or simply the individuals did not want to engage with the programme. Despite this, I was able to design a more flexible project allowing me to create a design to facilitate the aims around the COVID pandemic (Widener, 2020; Chong et al, 2010). The study was altered one final time to accommodate the objectives below:

1. Produce a Single Session Behavioural Activation (SSBA) online programme using the Behavioural Activation manual devised by Marwedel and Dubicka (2014)

2. To examine the effectiveness of the SSBA programme in increasing general mood and well-being with adults 18 and over in comparison to a control condition

These objectives collectively allow the examination of the usefulness of the BA programme using an online platform and how it can be used to support individuals experiencing low mood or well-being. In line with the first objective, I wanted to ensure that the programme was short but still included the integral elements of the manual to allow individuals to go through the different aspects of the programme and complete them with ease. This included the introduction to BA, goal setting, activity scheduling, avoidance, problem solving and rewarding oneself when achieving a goal (Marwedel and Dubicka, 2014). Therefore, I began to explore how I can utilise the BA programme and tailor it to ensure it was easy to follow and allow the individual to become more self-governing (Ryan et al, 2011). I felt that it was necessary for the individual to complete the programme with as little assistance as possible to ensure that they felt that they were confident in understanding themselves more whilst also giving them more control which may not have been possible in a face-to-face environment. With the increased need in psychological support, I felt this was a requirement to examine whether we can successfully apply a valuable programme to those individuals who may not have the facilities to access the face-to-face support as well as those individuals who are on the waiting list to hopefully allow them to engage with a model that they can successfully go through themselves in the meantime (NHS, 2021). I feel this was pertinent due to the continued pressures on the NHS to give access to individuals who require psychological support and with the limited services available individuals may find this method useful in allowing them to feel more confident to ensure their needs are met even though this may be for a short period. This has been evidenced in the June 2021 report on the use of Improved Access to Psychological Treatment (IAPT) whereby the majority were able to access therapy within 6 weeks however, many did have to wait for around 18 weeks to

start treatment (NHS, 2021). Therefore, there is a necessity that additional support should be considered so that individuals can access treatment shortly after their need for therapy. For instance, individuals on the waiting list may benefit utilising a short-term BA programme prior to starting therapy, equipping them with the engagement and motivation required for therapies such as CBT.

Pre-ethics (Design)

To allow me to understand and examine the use of the programme and how I can portray it to individuals effectively I attended professional development courses such as those by Professor Windy Dryden who is a pioneer in single session therapy to allow the programme to be concise yet applicable for the population. I also sought advice from psychiatrists I was working with when I was trained in the manual to ensure I captured all the core elements of the programme. I felt this was necessary to make sure my research had rigour and a strong grounding to be able to support individuals who may require the service. To establish rigour, it was important that I was confident in the manual and had the understanding and awareness of how to transform the manual into a shorter yet informative online programme. Due to these combined efforts, I was able to reduce the initial 8 sessions to a single session whilst also ensuring all the core elements of the programme were incorporated into the single session. This process of reducing the 8 sessions to one single session took me around two months as I wanted to ensure that individuals accessing the programme can complete it with ease and with limited guidance, giving them more control over their behaviours and actions.

To ensure I was being consistent yet succinct, I worked through the core elements of BA and reduced the content to ensure it was understandable yet not too enduring for the individual. This allowed me to not only understand the programme as a participant but also helped me in exploring the purpose of the different elements in the manual and how they

would be useful for anyone using the programme. This became a very important aspect of my training as a PhD scholar as I was able reflect on the programme and explore it in a way to not only understand it as a practitioner but also a participant. The reason for this was to allow further exploration of the programme and explore whether as a participant I would feel comfortable completing the programme with little assistance. Research by Johannsen & Jack (2020) indicates self-governance increases productivity allowing me to incorporate the core content into the programme whilst giving the individuals more governance. From this, I realised how I can use this brief programme in my face-to-face sessions with clients in the future to provide them with more autonomy and self-governance. However, I do feel if the programme was delivered in a face-to-face environment, I could make it more open to interpretation to allow the individual to take more ownership of their behaviours whilst providing them with little assistance when and if required.

As the programme was accessible online it was essential to only take around 20-30 minutes to complete as usually when completing such activities online it can be draining, and we only really attend to them for around 30 minutes. This has been supported by Saleh and Bista (2017) who found 91% of the participants agreed that they would complete the survey if it was feasible to complete within 15 minutes. Thus, the time frame was also put as a suggestion to the participants as they could complete the tasks before or after the 30 minutes to allow them to recognise that it is not too taxing. I found the first objective of creating the SSBA programme using Marwedel and Dubicka (2014) manual into an online programme very useful and was excited to see how individuals responded to the programme.

Ethics process

Nonetheless, I did face many difficulties after this stage. One of the major issues I faced during the progression of the project was obtaining ethical approval. The project changed numerous times due to the difficulties in exploring the effectiveness of the

programme with restrictions in place due to COVID-19. This was even more difficult when I had to change my entire project after receiving ethical approval which was very overwhelming for me. At that time, I felt as though I could not go further as I was passionate about my initial project and had everything ready to start. This project was primarily going to be conducted in a school setting where the young people would be able to access the 8-session programme by trained staff however due to the pandemic this programme had to be tailored to be accessible online as it was no longer feasible to conduct the programme in a face-to-face environment. This change was difficult for me as I had to make sure the programme was not enduring yet included all the core elements allowing individuals to complete it in a shorter period. Also, the effectiveness of the programme had to be explored with adults 18 and over to ensure accessibility to the programme was feasible and attainable. This was also due to factors of consent as individuals under the age of 18 would need parental/guardian consent prior to starting the programme whereas individuals 18 and over are able to consent themselves (Roache, 2014).

During this process the project underwent several ethical reviews due to which the original aims and objectives had to be tailored to address the current project. This was personally very difficult for me as I had to revise my ethics submission around five times before it was approved later in the year. Due to this, I had to change my project vastly to still explore the primary objectives of the project yet also adhere to the government guidelines and suggestions made by the ethics reviewers. I realised that the previous project ideas could no longer be feasible, so I amended my ethics application so that I was still exploring the aims and objectives of the project despite the short period of time (Widener, 2020). After numerous attempts ethical approval was obtained in August 2021 from which date after I was able to start the new project which focused on general mood and well-being.

Post-ethics (Recruitment)

Finally, as the paper changed to explore a more open approach to focus on mood and well-being the recruitment difficulty still lingered but there was more engagement. It is important to note that due to the time restrictions I was only able to collect data for a month which affected my recruitment process immensely. But I did not let this affect my motivation in engaging with potential participants and hoping to recruit as many participants for the project as I could. Therefore, many more changes had to be considered, for instance the sample was due to be recruited via volunteer sampling however this was no longer possible, so the sampling changed to opportunity sampling instead. The reason for changing the sampling to opportunity sampling was to attract more individuals who would feel comfortable taking part in the research as when volunteer sampling was employed there was very little engagement. Despite this, many of the participants completing the programme were able to forward the project information allowing others to complete the BA programme or control condition as well. This somewhat led to a mixed sampling approach of volunteer and opportunity sampling which should reduce any bias and increase the generalisability of the findings. As a result, due to time restrictions and still limited engagement, I considered a 'less is more' approach allowing me to recruit 10 participants in each condition (Normand, 2017). This has not only helped me in understanding how difficult recruitment can be but also how I can turn the difficulties around into something I can use positively to explore the purpose of the research. This also made me realise how areas of my project could have been altered earlier to ensure the objectives were being met efficiently. For instance, I was aware that there would be difficulty in the recruitment process but spent too much time relying on other services to aid this. If I had understood this matter earlier, I may have been able to recruit more participants in each condition before the end of the data collection period.

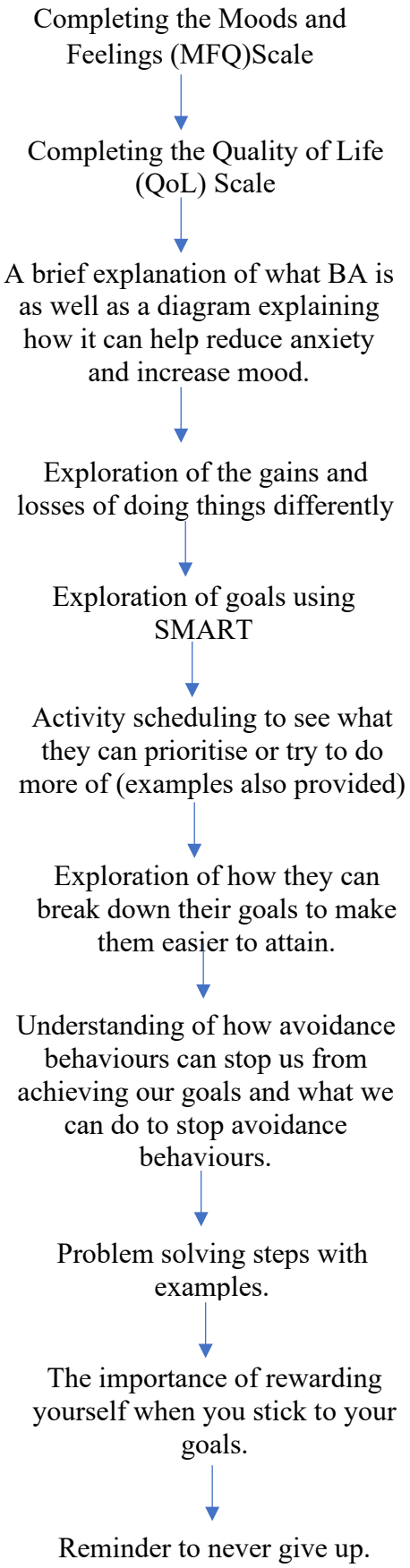
Why Randomised Controlled Trials?

I wanted to explore the effectiveness of the BA programme using a Randomised Controlled Trial (RCT). RCTs have been a valuable methodological design in informing credible results not only within social science research but also medical research indicating how integral it is in examining the effectiveness of not only medicinal products but also psychological interventions (Kendall, 2003; Akobeng, 2005). Therefore, I wanted to see how effective the programme is in comparison to a control group to identify whether individuals find it useful ensuring a more rigorous methodology (Sibbald and Roland, 1998; Christensen et al, 2004). This method also minimises the risk of extraneous variables allowing the research findings to be valid and justified.

The study designs

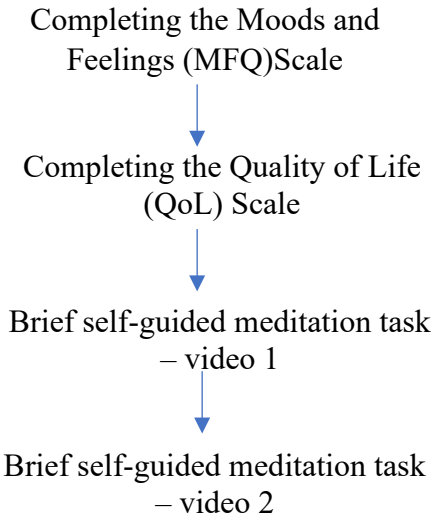
The BA programme consisted of a total of eleven tasks which were the following:

Figure 2.1 *Tasks within the BA programme*



However, the control group had only 4 tasks with the first two being the same as the BA programme:

Figure 2.2 *Tasks within the Control group*



Both conditions do, however, take the same duration of time to complete. The purpose of this was to make sure the participants would complete the different conditions with very little difference in duration to make it seem very similar in length as the programme. This has been supported by Kendall (2003) who identified how useful controlling the duration of the examining conditions can be in allowing a more stringent method and analysing how effective the cause-and-effect relationship within this method is established. This ensures that factors such as time would not contribute to the result of either the BA programme or the mindfulness condition. The purpose for utilising mindfulness as an online control condition was to identify whether BA can be successfully applied online as a single session rather than the results forming as a result of extraneous variables. Previous research has indicated valuable findings within RCTs with the comparator group being mindfulness with participants actively engaging in the control condition forming a more valid and evidence-based result as a result of the manipulation of the independent variable (Malay and Chung,

2013; Ly et al, 2014; Huguet et al, 2018; Sun et al, 2018; Xie et al, 2019; Jelineck et al, 2020). To assess the effectiveness of the conditions it was important to conduct follow-up measures to understand whether the participants found the programme useful. Therefore, after participants would either complete the programme or control condition, they were required to complete three further follow-ups which only consisted of the MFQ Scale and QoL Scale. Both the MFQ and QoL scale have demonstrated high validity and high test-retest reliability which is why they have been considered for pre and post examination (Angold et al., 1995; Wood et al., 1995; Messer et al., 1995; Angold et al., 2002; Huo et al., 2005; Mick et al., 2008; Streiner & Norman, 2008; Stevanovic et al., 2011). The follow-ups were designed to be conducted 2 weeks after completing the programme or control condition, then 6 weeks later and finally 10 weeks later. The reason for only asking the participants to complete the two scales as the follow-ups was to assess whether participants show a reduction in mood and increase in general well-being. In addition to this, it was also to identify how effective the conditions can be in the long-term. This would have been determined by analysing the results from the participants completing the different conditions to assess which reduced mood and increased well-being more. But, due to the ethics only being approved in August the follow-ups could not be conducted. This was further impacted when the study was receiving very little engagement. This aspect impacted the project immensely and reduced my mood as I was finding the recruitment procedure difficult. I also physically approached charities when restrictions were lifted to ask whether individuals could complete either one of the conditions when they use the services, but I was unsuccessful. This was the first time when conducting research, I felt immense unease and did not feel comfortable in conducting the research anymore as I felt incompetent due to the repeated barriers I had to face. This made me change many aspects of the research paper. As a result, overtime the methodology of the project changed extensively making me at times conflicted

in understanding the true aims of the project. However, I persevered and decided a follow-up is required to understand what the participants thought of the programme so with the MFQ and QoL scale I also included brief qualitative questions (Appendix 4) so that I was able to explore how the participants may have found the programme or control condition useful and what could be changed.

The use of qualitative questions allowed me to feel confident in exploring the effectiveness of both conditions as due to not having much time to complete the follow-ups this method allowed more exploration in how the participants felt in completing the conditions (de Salis et al., 2008). Also, using this method I was able to minimise the risk of not having any data to examine whether the BA programme has been useful or not. I felt very confident in this change of method as it not only encompassed the effectiveness of the BA programme which was the core feature of the follow-ups but also allowed more engagement from the participants as they were able to reflect on their experiences more. In addition, I feel this change suited the project more as it allowed the participants to all still complete the entirety of the programmes whilst not having to follow them up until the 10-week period after completing the first stage of the programme. Therefore, this change mitigated any changes in participation and allowed a wider participation. The implementation of a mixed methods design allowed a more open approach allowing the researchers to understand not only the effectiveness of the BA programme but also how the participants felt after completing the different stages of the project. This will not only allow an examination of what worked well in the programme but also what the participants feel could be changed to implement a more useful and widespread programme accessible online. This is widely appreciated throughout research using RCT designs as it not only informs the usefulness but also considers a reflexive approach in furthering the development of the research (O'Cathain et al, 2014; Bryne et al, 2020).

Recommendations to researchers

Due to all the changes I have had to consider and apply in my research project over the last ten months, I would suggest researchers conducting any form of research within a difficult period such a pandemic to always consider having an additional research idea which can be conducted virtually. I originally felt as though I did not need to consider an alternative project but due to the difficulties experienced, I learnt how difficult it can be to start a project from the beginning all over again after spending a year to put it into action and receive the ethical approval. Because of this misconception, I spent around 2 months trying to create a new project and a further 5 months trying to ensure it was feasible and gain ethical approval to start the project. Additionally, I would recommend researchers consider their target population more and explore how they can effectively encourage engagement from participants. Throughout, my PhD journey thus far I have found this to be the most difficult of all. It is imperative to understand that regardless of the research undertaken recruitment can be difficult and to reduce this difficulty you can widen your network to ensure you have support in contacting individuals who may know or can introduce others suitable for the project.

From what I have experienced over the last year whilst trying to conduct the project and focus on making sure I was able to analyse a novel area of research I feel I have managed to pass a very difficult hurdle. One being ethical approval and the other being recruitment. I feel I have overcome many barriers and have valuable data to explore and analyse whether BA is effective in increasing mood and overall wellbeing. I am looking forward to analysing the data and examining whether the BA programme is effective in increasing low mood and general well-being and how rigorous the findings will be in contrast with the control group.

Chapter 3: Empirical Paper

The effectiveness of Behavioural Activation (BA) online in increasing mood and well-being: A randomised controlled trial

Introduction

Difficult events and experiences can leave individuals with low mood and depreciated wellbeing (ref?). The National Health Service (NHS, 2021) describe low mood as an emotional state which could be a result of sadness, frustration, anxiety, or low self-esteem. It usually lasts for a few weeks, however if it is ongoing, affecting your daily life, then it could lead to depression (Shafier, 2021). Between 2019 and 2021 many individuals have experienced mental health difficulties of some sort due to the COVID-19 pandemic. The Office for National Statistics (ONS, 2021) reported 1 in 5 adults experienced some form of distress during this period which had doubled to 49.6% since the COVID outbreak. As a result, there has been an increase in individuals requiring mental health support with services such as the NHS being under strain due to staff burnout resulting in staff shortages. This has been indicated by the King funds report (2020) into the NHS workforce which found that there is a shortage of around 84,000 mental health and community support staff, therefore reducing provision and availability for those who require mental health assistance.

Cognitive Behavioural Therapy (CBT) has been the primary psychological therapy for many years owing to its evident effectiveness in the mental health field (Tolin, 2010). By using the term “effectiveness” we consider the evaluation of both past and new research and treatments which have improved the care and treatment for individuals. As reported by NICE (2022) this has allowed CBT to be the most prevalent psychological treatment within the NHS and private practice. Due to the effectiveness of CBT around 7, 000 clinicians in the UK have primarily been trained to deliver CBT (Kings Fund, 2020). However, this has not only restricted the options for therapy for clients but has also increased the waiting times with

several individuals waiting at least six months to receive therapy (British Medication Association (BMA), 2018). Reichert and Jacobs (2018) examined the impact of waiting time on patient outcomes and found longer waiting times increased the individuals need for therapy as their condition deteriorated, which could have been reduced if they were able to seek treatment much sooner (Health Education England, 2017). Thus, it may be useful to consider other short-term psychological therapies which individuals can engage with whilst on the waiting list.

Indeed, CBT follows a structured format whereby individuals are required to cognitively deliberate their difficulties and potentially reflect on their past experiences with the support of a therapist (BABCP, 2021). However, some individuals may find it difficult to engage with as CBT follows a structured format which may not be suitable for individuals who may find this difficult such as younger individuals, individuals with additional needs or individuals with more complex mental health (Halder and Mahato, 2019). Therefore, for this population it may be suitable to use a more linear model which focuses more on the behavioural components which can be easier to comprehend as the focus is more on the reinforcement of positive behaviour rather than reconstructing their cognitive thoughts. Additionally, the required sessions in CBT are dependent on the individuals' current difficulties which could be anywhere between 6 or 20 sessions and are also decided with the therapist (BABCP, 2021). This could be time consuming and may create dependency issues if the difficulties emerge again. Yet, short-term treatment such as Behavioural Activation (BA) may yield just as effective results whilst reducing time commitment in terms of the number of sessions and therapist support (David et al., 2018; Liness et al., 2018; Gupta et al., 2019).

Therapies such as BA have been overshadowed due to the dominance of CBT with NICE (2022) suggesting it as the recommended treatment for depression and anxiety (Tolin, 2010). BA essentially derives from behavioural theory whereby individuals learn through the

process of conditioning to positively change their behaviour (Skinner, 1938, Wilder et al., 1998). BA first emerged in the 1970s introducing a brief, low-risk behavioural programme with a focus on enabling individuals to understand their behaviours and actions and understand how they can positively challenge them to increase their mood and well-being (Ekers et al., 2011; Richards et al., 2017). When applying BA, the individual is required to follow a manualised, linear programme allowing them to create positive goals in a sequential format. This allows the individual to see what they have completed and achieved at each period of therapy. The goals developed by clients can be broken down to ensure the individual can achieve them gradually and successfully without feeling the need to achieve the goal by the end of therapy (Lejeuz et al., 2001; Marwedel & Dubicka, 2014). Essentially the model works by implementing the following core components: (a) engagement with the model – understanding what BA is and how it can support the individual; (b) goals/values – allowing the individual to understand what their aims are and what they would like to achieve; (c) activity scheduling – to allow the individual to understand how useful schedules can be and what they can do if the schedule has been disrupted and (d) dealing with avoidance – this ensures the removal of a vicious cycle and works on dealing with rather than maintaining the behaviour (Cuijpers et al., 2007; Kanter et al., 2010).

BA has been largely effective in the treatment of depression within the adult population (Jacobson & Gortner, 2000; Ekers et al., 2011; Richards et al., 2017; Stein et al., 2020). This is evidential in Randomised Controlled Trials (RCTs) examining BA as the psychological treatment for depression (Dobson et al., 2009; Barth et al., 2013). For instance, research conducted by Dimidjian et al. (2006) whereby they conducted an RCT comparing BA, CBT, and antidepressants as treatment methods for the treatment of depression found BA was just as effective as antidepressant treatment which were both more effective than CBT. This indicates the validity of BA as a stand-alone treatment for depression and

showcases how it can be useful for an adult population. The effectiveness of BA in the treatment of depression has been further highlighted by Richards et al. (2017) who found BA to be just as effective as CBT amongst the same population. Research around BA has also indicated how valuable it can be with different populations. Dimidjian et al. (2017) applied BA with pregnant women diagnosed with depression and found that BA was effective in reducing depressive, anxiety and stress-related symptoms. This indicates how valuable BA could be in reducing depressive and anxiety-related symptoms within a wider population. However, as the research was conducted over a three-month period in a face-to-face environment, similar results may not be possible especially with the pandemic. Despite this, it is evidential that BA can be a useful psychological treatment not only for depressive symptoms but also in treating anxiety which has increased to 49.6% as of March 2020 (ONS, 2021).

As BA is a linear, manualised programme it can be easily explored by both the practitioner and client both within and outside of a session. However, there are very limited BA manuals available to consider and be trained in to effectively use BA. This criticism has been addressed by Lejuez et al. (2001) and Martell et al. (2010) who devised their individual BA manuals providing practitioners with an accessible framework to use and apply for BA therapy in practice. Similarly, Marwedel & Dubicka (2014) created a BA manual which can be explored with an adolescent population. They all place emphasis on increasing individuals' exposure to positive healthy behaviours to increase the likelihood of the behaviour being repeated and reducing the avoidance behaviours which is an essential element to allow positive change (Mazzuchelli et al., 2011; Ross et al., 2016). As a result, the use of BA could even be beneficial as an early intervention with the encouraged use of the strategies within school to motivate more positive behaviours. However, this process requires active

engagement from the participant and if they do not engage with the programme, they are likely to not find BA therapy useful.

BA has been found to not only be an effective therapeutic approach but also a simplistic approach that can be delivered by non-specialists in the psychological field. This would reduce the burden from other practitioners allowing even mental health workers to facilitate individuals who may find BA useful. For instance, Drake et al. (2001) found it is not necessary only clinically trained specialists deliver BA in practice as even non-specialist staff can deliver the approach with ease and show understanding and sensitivity to their clients effectively (Ekers et al., 2011; Richards et al., 2017). This could ease the strain on clinicians by allowing mental health support workers to also deliver BA effectively. This could also translate into schools and other workplaces whereby a welfare staff member could integrate BA strategies to promote well-being and encourage more healthy and positive work environments.

Similarly, by conducting sessions online, BA therapy may become more accessible. Research has indicated how valuable BA can be as an online therapy. Huguet et al. (2018) looked at the effectiveness of BA as an online therapeutic approach and found BA to be just as effective as CBT. RCTs have also been conducted online comparing BA therapy to either psychoeducation or mindfulness. For example, Jelinek et al (2020) found online BA to be effective in reducing depressive symptoms (O'Mahen et al., 2013; Ly et al., 2014, 2015). However, with majority of the participants being female and who were already exposed to the therapy, bias effects could have created such a high effectiveness rate. Nonetheless, research does indicate the value of online therapy allowing more accessibility especially with the pandemic. This indicates not only the usefulness of BA as an online approach but also showcases the transdiagnostic approach BA could be whereby it can be used alongside CBT or as a standalone treatment as also evidenced by Chen et al. (2013). In effect, potentially the

programme may be used as something individuals can use prior to starting therapy, whilst on the waiting list.

However, when considering online therapy, it is imperative that an individual is motivated to engage in the intervention, as they do not have the support and motivation that is often a key aspect of more traditional face to face therapies. With the increase in number of individuals accessing therapy the evolution of single session therapy has grown immensely. Single session therapy has become popular with clinics in Canada, for example, Perkins (2006) applied a solution-focused single session 2-hour assessment and therapy session and found that the majority of individuals who took part in the sessions significantly improved after a single session. Similarly, Hymmen et al. (2013) reported a decrease in distress, anxiety and depression levels after a single session of therapy. Such findings have motivated more research to be conducted with a single session format. For example, Bowman and Turner (2022) explored Rational Emotive Behavioural Therapy (REBT) within a single session of golfers and found reductions in social anxiety and improvements in wellbeing in 4 out of 5 golfers…. This could be due to the individuals being aware that the single session requires more engagement from them, hence, are more active in the session resulting in more positive results.

Rationale

The purpose of this project is to examine and explore the effectiveness of a single session behavioural activation (SSBA) programme on an online platform. The purpose of using a mixed methods approach is to gain a thorough perspective to the results of the research with assessing the effectiveness of the approach using quantitative methods whilst giving the participants a voice and understanding their experiences through the qualitative measure (Creswell, 2003). As mentioned earlier BA is a brief, low-risk programme allowing the individual to comprehend their aims and achievements in helping guide them to their

purpose of therapy. As the focus is goal setting and the importance of the removal of a vicious cycle it can be useful for individuals experiencing low mood or those who are having general psychological difficulties in their wellbeing. To clarify as there are multiple definitions to the term "wellbeing", in this project we consider Dodge et al. (2012) perspective where they consider both the hedonist (positivity) and eudemonic (meaning and purpose) components but also consider the fluctuations an individual can experience. Therefore, wellbeing is being considered on a continuum entirely dependent on the individuals' subjective understandings.

Due to the simplicity of the BA approach the aim was to utilise the BA manual devised by Marwedel & Dubicka (2014) which consists of 8 sessions as the primary researcher was trained in the manual for their MSc project. The sessions are condensed to a single session to make it more accessible and attainable as an online programme. The reason for the programme being online is to assess whether this BA manual can be effectively applied online as a single session and how useful it can be for the general population.

Prior to conducting the project guidance was sought from Professor Windy Dryden (via a webinar) who is a pioneer in single session therapy as well as the psychiatrists who created the manual to fully comprehend the core elements of the programme and how it could be successfully condensed to a single session. The purpose of reducing the 8-session model to a single session online programme was to allow individuals to engage with the programme reducing any long-term commitment. The study is conducted in the form of an RCT to understand how effective the BA programme is in contrast with a comparative control group. From conducting this project, evidence may support the current level of practitioner scarcity and overwhelming demand for mental health support, moving towards a provision for low-intensity interventions.

Aims

1. To produce a Single Session Behavioural Activation (SSBA) online programme using the Behavioural Activation manual devised by Marwedel & Dubicka (2014)
2. To examine the effectiveness of the SSBA programme in increasing general mood and well-being in comparison to a control condition
3. To understand the participants experiences of using the programme to make sense of the short-term data collection

Hypothesis

1. The SSBA programme will increase general mood and well-being due to the engagement required with BA

Methodology

Participants

Participants 18 or over, experiencing low mood or low well-being within the United Kingdom were eligible to participate in the study. Whilst any individual diagnosed with a mental difficulty were excluded. As a result, a total of 20 individuals voluntarily completed the study.

Participants were randomly allocated to either the SSBA (n = 10) or control (n = 10) condition using the Qualtrics software randomisation component. It was essential for the programme to be completed voluntarily to avoid any pressures on the participants (Newington and Metcalfe, 2014). As a result, if the individual felt the study was relevant, they continued to complete their assigned condition.

In terms of the sample size, it was essential to capture both a thorough quantitative and qualitative perspective due to the short timescale of the study. Therefore, as a total of 20 participants were recruited it seemed appropriate to begin data analysis. The analysis of a small sample size has been supported by Normand (2017) as allowing more thorough analysis of the findings. Thus, incorporating a more idiographic and introspective approach to

be applied to the study, moving from a group-based analysis to a more individual data analysis, gathering more details on the epistemological understandings demonstrated by the participants from completing the timepoint 1 element (Graham et al., 2012).

The individuals who took part in the study were all adults with the majority being female (65%). However, in the BA condition there was an equal distribution of male and females. In terms of ethnicity many of the participants were White British in the BA condition (70%) whilst in the control condition the majority were British Asian (60%). In terms of age, in the BA condition, the age range was 24-41 whilst in the control condition it was 23-50.

Design

To examine the SSBA programme a randomised, mixed methods study was conducted, considering a phenomenological approach. When considering a phenomenological approach, the purpose was to assess individuals' experiences with the programme and the meanings they associate to this.

The participants were randomised into either the programme or control group where they completed two questionnaires exploring their mood and well-being. The purpose of randomising the participants was to ensure the minimisation of extraneous variables and reduce selection bias thus increasing rigour in the study (Blatch-Jones et al., 2018). Thomas and Magilvy (2011) state rigour involves the validity and transferability of the research findings. Thus, by randomly allocating participants using double blind conditions the aim was to understand how the participants would credibly complete either condition and how the results can be transferable within the research field without any researcher bias.

To address the aims further the study incorporated two timepoints, a pre and post timepoint, allowing the formation of a mixed methods approach. The first timepoint focused on the quantitative element of the study, incorporating a group analysis. The second

timepoint which was completed seven days after the first timepoint, considered a more qualitative aspect allowing the participants to reflect and create meaning between their experiences (Stanley & Wise, 1993; Moustakas, 1994). This component allowed a more subjective interpretation of the applicability of the SSBA programme allowing the participants to share their perspective and provide critiques to the programme (Dunning et al., 2008; Malina et al., 2010; Lopez-Fernandez & Molina-Azorin, 2011). The purpose of this was to idiographically incorporate the results rather than just consider a group understanding. Therefore, exploring the participants perspective and examining why some individuals may have experienced the conditions in different ways was essential to validate the credibility of the programme (Stout & Salm, 2011; Mayoh & Onwuegbuzie, 2015).

Ethical Considerations

Ethical approval for the study was granted by the Manchester Metropolitan University Psychology Ethics department. To maintain confidentiality, each participant created a unique identifier which was only known by the research team. This was essential to allow the researchers to match the participants timepoint 1 and timepoint 2 responses to examine whether the SSBA programme has illustrated effective results in correlation to the control condition. Pseudonyms were used in the analysis of the results.

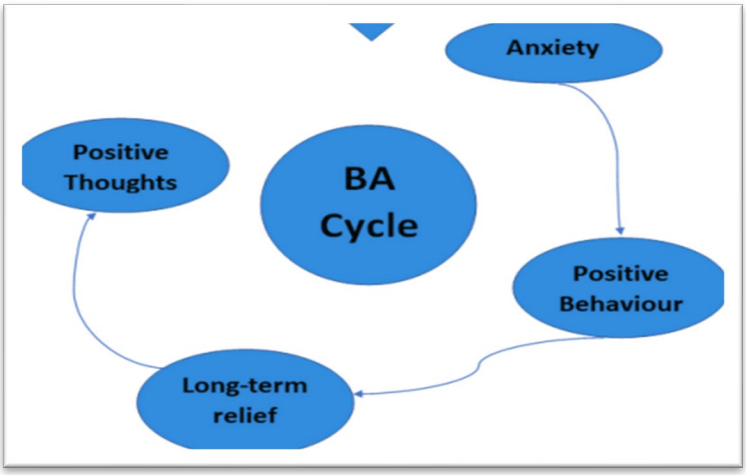
Materials

SSBA Programme development. The SSBA programme was devised with guidance from the BA manual created by Marwedel & Dubicka (2014). This manual is targeted towards a young person population, hence uses simplistic terminology. Therefore, it was useful to incorporate for an adult even with basic English understanding who would also be able to follow the programme with ease. Additionally, as the primary researcher had been trained in this manual as well as conducting a feasibility study for this manual it was deemed to be suitable to be used for this project (Dubicka et al., 2022). However, the manual consists

of 8 sessions and for it to be applied efficiently online, targeting a universal audience, it was imperative that the elements of the manual were reduced to allow more engagement. This would also allow them to use their autonomy to follow the programme individually. Thus, with the guidance provided by the creators of the BA manual and colleagues of the feasibility project the researcher retained the core aspects of the manual and reduced the duration of the programme from 8 to 1 30-minute session. This reduction process took two months to ensure the integral aspects of the programme were still reflective in the SSBA programme. This was due to a mixture of guidance received by experts in the field in addition to the core elements of the programme still being translated within the 30-minute session.

The programme starts with a brief definition of what BA is explaining how it is a goal-oriented process which is simple and easy to follow. There are also positive affirmations such as information around how an individual may "get stuck" but it is natural, and they should try the best they can to achieve their goals. There is also a BA diagram displaying how BA would essentially work - this is shown below. As a result, the final SSBA programme included 8 tasks in total with the core BA components reflective chronologically within the programme.

Figure 3.1 The cycle of BA indicating how anxiety reduces with awareness of positive behaviours leading to long-term relief, increasing positive thoughts.



1. Coping strategies
2. Pros and Gains for doing things differently
3. Creating SMART goals
4. Activity Scheduling
5. Breaking down goals
6. Avoidance

7. Problem Solving
8. Rewards.

The 8 tasks have been explained further in Table 1.

Table 3.1. *Components of the SSBA Online Programme*

Core elements of the SSBA programme	**Purpose**
Coping strategies	To understand how the individual is coping from a and to allow them to think retrospectively, compare what they are currently doing and how going through the programme they may change or adapt the strategy.
Pros and Gains for doing things differently	It should provide the individual with a clear understanding that sometimes the strategies may not be effectiveness hence, they need to think of other behaviours they can channel to make them feel more positive about themselves.
Creating 3 SMART goals	It breaks down the goal into 5 different components making it much easier to comprehend and achieve. There is also a diagram in the programme indicating what a SMART goal is and how it can be created.
Activity Scheduling	It allows individuals who may be experiencing low mood or wellbeing some form of routine which may increase their mood and wellbeing by doing activities they enjoy doing. In the programme there is a diagram of a range of activities an individual can take part in.

Breaking down goals	It allows the individual to comprehend how goals broken down into smaller steps are more manageable and feasible to achieve.
Avoidance	It provides a more reflexive understanding for the individual allowing them to determine whether behaviours; actions or emotions may reduce their ability to achieve their desired goals.
Problem Solving	It provides reassurance that avoidance behaviours can be reduced to support the individuals positive move to achieve their goals. In this section there is a diagram explaining the 5 stages of problem solving.
Rewards	As behavioural theory suggests if an individual is rewarded for their behaviour the behaviour is more likely to be repeated.

Control programme development. It was imperative to consider a control condition where the participant would not be required to complete many active tasks but instead engage in passive tasks allowing a more thorough understanding of the value of the SSBA programme. The reason for this was to understand how active engagement differs from passive engagement with research suggesting active engagement can improve awareness (Levine et al., 2014). Therefore, the control condition was sourced to incorporate an inert experience to address the aim of the study.

The control condition included two 12-minute videos around mindfulness which the participants would only watch and listen to. This would allow an experiential awareness rather than a didactic learning which requires more active engagement (Therapist Aid, 2017). The duration of the control condition was decided by the piloting of the SSBA programme with colleagues completing the programme in an average time of 25-minutes. This allowed for any affects between the conditions to be a result of the content rather than variables such as duration which was controlled by the researchers. This has been supported by several

RCTs which allowed a more comprehensive understanding of how the affects have been caused due to the differences in condition and not time (Biglan et al., 2000; Pbert et al., 2011 Stecker et al., 2014; Popp & Schnieder, 2015; Aycock et al., 2018).

Measures

Mood and Feelings questionnaire (MFQ). The MFQ was devised by Angold & Costello (1987) as a self-report measure originally to be used with adult and young people populations. The measure has 13 questions with only three scales ranging from "Not true; Sometimes and True". The measure asks participants to consider their answers in relation to how they have felt over the last two weeks. Examples of questions: (a) "I felt lonely"; (b) "I found it hard to think properly or concentrate"; and (c) "I thought I could never be as good as other people". Research has indicated the high reliability of the scales and how the measure has been effectively applied in epistemological studies (Angold et al., 1995; Wood et al., 1995; Messer et al., 1995; Angold et al., 2002; Huo et al., 2005). This indicates the validity of the measure suggesting how it could also be used to assess an individual's progress as a follow-up rather than the usual face to face check-ins. For this reason, this scale was selected to assess the participants Mood over the two timepoint project.

Quality of Life questionnaire (QoL). The QoL measure was devised by Endicott et al. (1993) as a scale to assess overall wellbeing and life satisfaction. The measure has 16 questions with a five-point scale ranging from, "very poor; poor; fair; good and very good. The scale starts with: "Taking into consideration over the past week how satisfied have you been with…" leading to the 16 items. Example items include: (a) "Physical health…"; (b) "Social relationships…"; and (c) "Economic status". Fourteen out of the sixteen items have been stated to yield the appropriate score with the final two items as stand-alone items. It has shown high test-retest reliability in several research papers, therefore is appropriate for individual comparisons implying the measures stability in repeated measures assessments

(Mick et al., 2008; Streiner & Norman, 2008; Stevanovic et al., 2011). For this reason, this scale was selected to assess the participants Wellbeing over the two timepoint project.

Procedure

Prior to the study, guidance was received by the academic supervisors and Behavioural Activation specialists (Dubicka et al., 2022) to ensure the effective delivery of the online programme in a single session manner. The programme was completed by participants remotely and entirely online. The survey link was designed to be randomised so a participant was directed to either the SSBA programme or the Control condition through the Qualtrics randomisation survey flow. Once the participant accessed the link, they were able to view the Participant Information Sheet (PIS) followed by the consent form. The link was created to allow the participant to click on a single link and they would either complete the SSBA condition or the control condition. This was trialled several times to assess whether the same participant would receive different conditions each time they click the link ensuring they received the same condition each time to allow the randomisation process to remain double blind.

After consenting, the participants were asked to create a unique identifier so that their personal details would remain anonymous yet allowing the researchers to correlate their timepoint 1 and timepoint 2 results. The unique identifier also was essential if the participant wanted to withdraw their data from the study as it ensured their personal information remained confidential.

Participants first completed demographic questions such as age; ethnicity and occupation to analyse which populations completed the programme and why this may have been the case. After this they were required to complete the MFQ, which is an assessment to identify the mood level of an individual (Angold and Costello, 1987); and a short version of a Quality of Life (QoL) Scale to assess their wellbeing (Endicott et al., 1993). The purpose of

this is to assess the wellbeing of the individuals as research has suggested it has a large impact on the daily experiences an individual encounters (Kuckertz et al., 2020). These scales have been considered as they have been widely used in psychological research for BA and low mood (Thordarson et al., 2004).

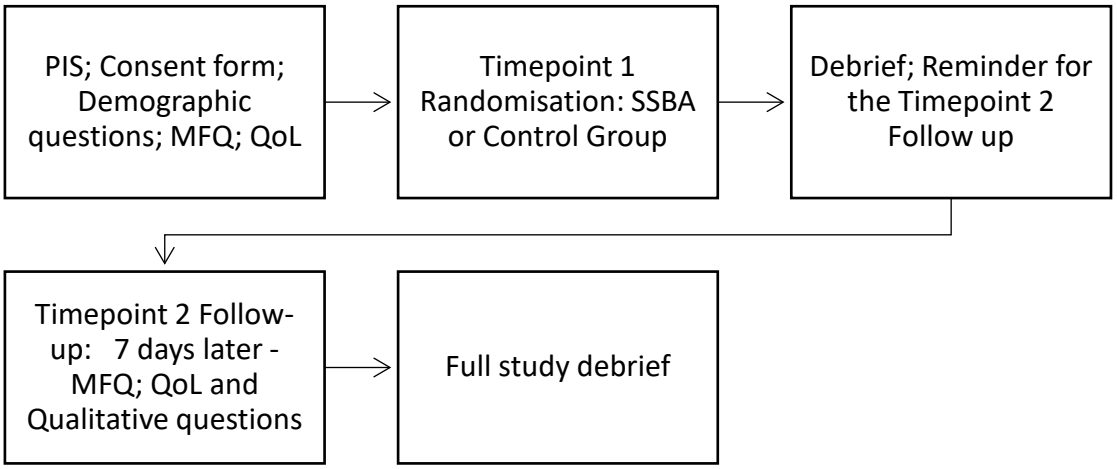
It was recommended that despite stating the programme (SSBA or Control) can be completed within 25 -minutes participants should work through them at their own pace to reduce any time pressure and ensure more engagement with the assigned condition. After the completion of the programme the participants were provided with a debrief and notified to complete the two scales again in addition to seven qualitative questions (below) 7 days after they completed timepoints 1 of the programme via email. Examples include:

1. Since the time you completed the programme last week, have you noticed any changes in your wellbeing in general?
2. Since the time you completed the programme last week, have you noticed any changes in your mood in general?
3. What do you think were the good aspects of the programme? Please be honest.

The remaining four questions are included in appendix 5.

The diagram below showcases.

Figure 3.2 The different timepoints to the project



Data Analysis

A 2 (*group*: SSBA or control) x 2 (*pre to post emotional change*: MFQ, QoL) repeated measures mixed method design ANOVA was employed with *group* as the between- and *pre to post emotional response* as the within-subject factors. MFQ and QoL were the dependent measures.

The quantitative data has been assessed using the software SPSS to examine the change in mood and well-being over the two-timepoints. In addition, the qualitative data which was primarily collected at the second timepoint was assessed using thematic analysis to understand the emerging themes and patterns within the dataset (Braun and Clarke, 2006). Both analysis methods were deemed to be the most appropriate analytic strategies because the purpose of the study was to examine and understand changes between the two time-points to determine whether SSBA is effective in reducing low mood and increasing well-being. To fully comprehend this, it was also useful to consider the participants viewpoints to the SSBA programme to recognise how the programme could facilitate them in addressing their needs.

Using a mixed methods approach allows for further and deeper exploration of the dataset. Whilst we can garner some understanding of the effectiveness of the SSBA programme by analysing the quantitative data from pre- to post-, qualitative data allows us to capture the perceptions of individual participants in a more nuanced way. Quantitative analyses based on inferential statistics provide group mean changes from pre- to post-, but cannot supply detail concerning why SSBA was or was not effective for individuals. Thus, when applying the qualitative element, it ensures that idiographically we can reach an understanding of how the interventions have been understood and perceived by the individual which allows further exploration of how the programme can be more suited to a wider population (Dunning et al., 2008; Wisdom et al., 2012; Halcomb & Hickman, 2015).

Results

Statistical analyses (Phase One)

The desirable effect size for the BA group would be between 0.2 and 0.5, indicating a small to medium change. The reason for this is to address how novice this form of research is and address any further areas of development considering this is the first study to conduct a single session BA programme RCT online. By addressing a small sample size, the aim is to facilitate an overall awareness of future developments in this area for further more elaborate research (Konietschke et al, 2021).

Group change. For the MFQ, there was no significant interaction and main effect, $F(1,18) = 3.24$, $p = .257$, $r^2 = 0.71$. For the QoL, there was also no significant main effect, $F(1,18) = 3.42$, $p = 0.89$, $r^2 = .153$. Follow-up paired samples t-tests were performed to assess whether and to what extent pre-post changes took place for each variable. These *t*-tests were performed for each condition separately. For the SSBA condition, paired samples *t*-tests findings for MFQ indicate a non-significant but small change from pre- ($M = 1.5$; $SD = 0.28$) to post- ($M = 1.25$; $SD = 0.23$) intervention ($t = 1.86$, $df = 9$, $p < .095$, $d = 0.98$, two tailed).

Paired samples *t*-tests findings for QoL indicate a non-significant but medium change from pre- (M = 3.15; SD = 0.68) to post- (M = 3.45; SD = 0.72) intervention (t=1.69, df= 9, p < .125, d =, two tailed, d = 0.49).

For the control condition, paired samples *t*-tests findings for MFQ indicate a non-significant but small change from pre- (M = 1.39; SD = 0.24) to post- (M = 1.34; SD = 0.22) intervention (t= .522, df = 9, p < .615, d = 0.23, two tailed). Paired samples *t*-tests findings for QoL indicate a non-significant but medium change from pre- (M = 3.12; SD = 0.57) to post- (M = 3.46; SD = 0.59) intervention (t= 1.09, df = 9, p < .303, d = 0.57, two tailed).

Thus, in terms of quantitative analyses, results revealed non-significant (p > .05) but small-medium changes in the target variables from pre- to post- intervention. In sum, a number of participants in the SSBA condition reported decreases in MFQ and increases in QoL, indicative of a positive response to the SSBA programme. Also, two participants in the control condition reported decreases in MFQ and increases in QoL, indicative of the control programme also facilitating a positive outcome despite requiring limited engagement from the participants.

Individual change. Although, statistical analyses did not reveal statistically significant group level change from pre- to post-intervention, in line with an idiographic approach, it is possible to understand how each participant responded to the programmes by visually inspecting frequency data concerning pre-post change. As can be seen in table 2 participants 2, 5, 6, 9 and 10 in the SSBA condition showed a decrease in low mood and an increase in general wellbeing. Also, table 3.2 highlights participants 11 and 16 in the control condition showed a decrease in low mood and an increase in general wellbeing.

Table 3.2

Hypothesised scores at both timepoints. A decrease in mood indicated positive results similarly an increase in QoL indicated positive results, indicated by the ticks in the cells of the table. Crosses indicate negative (against hypotheses) findings.

	SSBA Condition	
	Mood	QoL
1	x	x
2	✓	✓
3	x	✓
4	✓	x
5	✓	✓
6	✓	✓
7	x	x
8	x	✓
9	✓	✓
10	✓	✓

	Control Condition	
	Mood	QoL
11	✓	✓
12	x	✓
13	x	x
14	x	x
15	x	✓
16	✓	✓
17	x	✓
18	✓	x
19	✓	x
20	x	✓

Qualitative analyses (Phase Two)

To understand the data more fully it is imperative to explore qualitative data to assess the reasons why the SSBA programme was or was not effective in enhancing the target variables of MFQ and QoL. Exploring the data qualitatively would not only allow examination of individual differences but would also facilitate further understanding of the SSBA programme on the different populations involved in the study (Opsal et al, 2016). In order to achieve this qualitative assessment a small thematic analysis was conducted to identify themes and similarities. The following section is broken into three separate sections;

positive affect; no affect and any other affect. The purpose of this section is to allow the reader to understand the different themes emerging from individuals displaying a Positive change in both Mood and Well-being, No change in Mood and Well-being and Positive results in only Mood or Well-being.

Positive change in both Mood and Wellbeing for SSBA condition. As evidenced in Table 2, for the SSBA condition participants 2, 5, 6, 9 and 10 showed a decrease in low mood and an increase in general wellbeing. This result indicates a positive change in target variables for these participants.

Simplicity (easy to participate in the programme). The programme was found to be simple and easy to navigate. Participant 2 stated that the programme was *"clear", "useful" and "easy to take part in and navigate".* This also resonated with feedback provided by Participant 5 stating, *"easy, actually thinking about my goals and making a plan made the doing of it actually fairly effortless",* Participant 6*, "Informative…Easy to participate in, easy to follow instructions",* Participant 9, *"It was simple and easy to follow"* and Participant 10, *"It was simple*".

Engagement (motivation and interest to the programme). These participants even found the programme motivating and insightful. Participant 5 stated that they were, *"more motivated to get work done, accomplish more and procrastinate less"* who further explained that they are, *"more productive and feeling more motivated…done everything I've set out to do*. This parallels with Participant 6 who did not feel that their mood had decreased or that their well-being had increased - *"Interesting and insightful way of learning about wellbeing"*. The engagement with the programme also encouraged a participant on a variable that was not considered by the researchers. Participant 5 stated that the programme, *"made me consider actually budgeting my time better. Just the act of writing it down and thinking about it*

helped". But they also stated, *"I probably didn't engage as much as I should have. Reminders would have been useful"*.

Workload (duration and requirements to complete the programme). However, the participants who demonstrated positive results in both mood and well-being also stated their criticisms to the programme. Participants 6, 9 and 10 all stating that the programme could have been shorter - *"Could be a bit shorter, but overall great"*; *"It was a little long"*; *"There were too many goals to create"*.

No change in Mood and Wellbeing

Engagement. On the other hand, some participants displayed no change in mood and well-being. Participant 1 felt *"more anxious"* but felt as though it was a useful programme for reflection - *"had time to reflect on what I can do to concentrate e.g., strategies that might help"*. This resonated with Participant 7 who stated, *"good to see where I am at with things"*.

Like the participants that demonstrated positive results, Participants 1 and 7 felt as though researchers, *"could include reminders…prompts etc."* to the programme.

Positive results only in Mood or Wellbeing

Some participants, however only had a reduction in mood (participant 4) whilst others only increased in wellbeing (participants 3 and 8).

Reflective. Interestingly these participants found the programme useful in a sense of understanding their lifestyle. Participant 3 stated, *"it is an interesting approach to learning about one's life"* detailing further, *"it gave me the opportunity to think and question my lifestyle – something we don't get to do often"*. Participant 8 shared a similar experience, *"it helped me realise what I want to work on"*. With Participant 4 suggesting the value of goal setting - *"Goal setting allowed to restructure goals and provided a sense of direction"*.

Simplicity. Similar to the participants who displayed positive results they found the programme detailing and simple to navigate. Participant 3 stating, *"simple enough to*

navigate, understand and participate in". Participant 4, asserting, *"easy, with some areas confusing, but reading the instructions with the examples helped"*. And Participant 8 sharing, *"it was detailed"* and *"simple to follow"*.

Workload. However, the criticisms did echo the other participants experiences with the duration of the programme with Participant 8 stating, *"there were a lot of tasks to complete"*.

Overall, as there were similarities between the 3 sections above (positive change in both mood and wellbeing; no change; positive change in mood or wellbeing) the following themes were identified using thematic analysis:

Theme 1: Simplicity/easy to follow. Almost all participants but Participants 1 and 7 in the SSBA condition all stated that they found the programme simple and easy due to the useful diagrams and instructions throughout the condition. However, looking upon the demographic data for these participants they were largely female students with only one male. This was a useful finding as the reason for choosing and tailoring the manual used in the study was due to the simplicity and sequential format. This was also found in the feedback for the control condition where all the participants found the condition simple and easy to follow - *"It was simple enough to navigate, understand and participate in"* and *"Straight forward"*.

Theme 2: Informative and reflective. Participant's feedback varied when they explored the good aspects of the programme. The majority of the SSBA participants found the programme informative with some stating that they were motivated to be more productive with the participants who had shown no change even stating that it allowed them to think about their lifestyle and consider goal setting.

Theme 3: Recommendations for improvements. Many in both conditions found the tasks time-consuming, as detailed above. Despite this, participants were able to suggest

recommendations for the programme they participated in which all seemed to be along the same line of "reducing the duration" and "daily reminders" or "prompts".

Discussion

In this study we created a single session BA programme and examined the effectiveness of the programme on an online platform against the control condition of mindfulness. To the authors' knowledge the current study is the first exploration of BA as a single session online programme. It seems to be the right time to do, as individuals have reported an increase in mental health difficulties since the start of the COVID pandemic (ONS, 2021). This has resulted in the increased need for therapy with many professionals struggling to manage the increased workload creating burnout and staff shortages (Kings fund, 2020).

The main aims of the current study were to produce a Single Session Behavioural Activation (SSBA) online programme, to examine the effectiveness of the SSBA programme in increasing general mood and well-being (vs. a control condition - mindfulness), to explore whether the SSBA programme would be suitable for the general population and how it could be effectively applied to address short-term psychological support, and to understand the participants experiences of using the programme.

In the current study we were able to gain a thorough understanding of the effectiveness of the programme within the general population. In addition, assessing the participants individual experiences of conducting a short-term therapeutic intervention as opposed to mainstream therapy where the individuals would seek guidance from a practitioner, allowing self-governance and autonomy. This would not only help researchers in the field in understanding the validity and applicability of BA but may also support the current level of practitioner scarcity and overwhelming demand for mental health support, moving towards a provision for low-intensity interventions.

It was hypothesised that the SSBA programme would increase general mood and well-being and that the control condition will have no effect on the participants mood and well-being. Data did not support the hypothesis. Specifically, the SSBA programme had no effect on an individual's mood or wellbeing, with inferential statistics revealing no significant difference between the SSBA and control condition. The qualitative data indicated more thorough information with many individuals providing recommendations for the programme. Further frequency data demonstrated five out of the ten participants who took part in the SSBA condition mood and wellbeing improved from the pre and post intervention, indicating a 50% improvement when accessing the SSBA programme.

Even though, the statistical analysis did not reveal any differences, the frequency data may be useful. Specifically, half of the participants did report improvements in mood and wellbeing. Further, qualitative data showed that several participants found the BA programme beneficial and informative with the results indicating a reduction in mood and increase in wellbeing. The findings that some participants benefitted from BA is in line with previous research. For example, Jelinek et al. (2020) found online BA reduced depressive symptoms and with low mood being a major symptom for depression the findings for the study demonstrate high validity. Similar findings were also reported in O'Mahen et al. (2013) who found online BA effective in reducing post-natal depression. In other words, whilst inferential statistics did not reveal significant improvements in participant data, an idiographic approach to the data revealed a mixed picture in which some participants seemed to benefit from the programme.

That is, when the data is viewed qualitatively many of the participants found the SSBA programme "useful," "easy to navigate" and "more productive." It was useful in exploring the conditions idiographically as it allowed a thorough understanding of the value of the BA programme as an online short-term treatment programme whilst also giving the

participants a voice by valuing their perspective and allowing them to suggest recommendations for the programme. In effect, this allowed a more thorough understanding of what may be more useful and productive for the general population when using the programme. Thus, this could allow the programme to be a valuable tool in therapy whilst individuals wait to receive therapy or even for individuals who may not meet all symptomologies to receive psychological treatment. This would encourage further action in supporting the wellbeing of an individual. For example, with NICE (2022) allowing individuals with less severe depression to 'choose' a suitable treatment for their condition individuals can self-govern what may be the best treatment strategy for them whilst also factoring the other elements of their lives to ensure they have the capacity to govern their wellbeing sufficiently.

On the other hand, the control condition of mindfulness did not seem to have much effect on the participants. Whilst inferential statistics did not reveal any difference in the participants mood or wellbeing in the control condition qualitative data indicated more detailed information in relation to their experiences of completing the condition. Further frequency data showed only one participants mood and wellbeing improved between the pre and post assessments indicating more participants found the SSBA programme useful compared to the control condition. This is in line with the literature with individuals who took part in the control conditions not experiencing a reduction in their mood or wellbeing over the course of the study (Dimidjian et al., 2017).

When the data is viewed ideographically many found the control condition "tiring" and "repetitive." However, several participants did recommend changes such as "adding questions between and after" to facilitate more engagement and "including a task between the two videos" to allow individuals to comprehend the information and understand how much they were able to comprehend in that time.

In addition to between-within data analyses, participants were also asked to report qualitatively on perceived changes in outcomes, and on the BA programme itself. Qualitative data revealed many participants liked the BA programme and found it accessible but felt the duration of the programme was long. This could suggest that future research could consider short 15-minute tasks which individuals can complete daily as many individuals also suggested the introduction of daily reminders. This may evidently build more routine and structure helping them to increase their mood by being attentive to the programme and encouraged to value their goals and aims.

Whilst the results are promising, there are some limitations. The sample size of the study was quite low with only 20 participants being recruited. This was difficult to incorporate when assessing the results quantitatively. However, with the low sample size it was much easier to explore the results qualitatively and understand the usefulness of the programme despite the quantitative element of the results showing otherwise (Faber and Fonseca, 2014).

Another limitation would be the participants that had taken part in the study as they were in academia i.e., a student or academic. This may have caused differences in the results as with the individuals being in academia and participating voluntarily, they may have completed the programme to support further academic research in the field. This leads to limitations to the population that was considered as more females took part in the study and the age range of the participants was between 22-50. Future research could consider looking across a particular age group and allow a homogenous population as this study was unable to do so. This may yield different results and may suggest different implications to the use of the SSBA programme.

As the study was over a 7-day period this may have been a factor whereby the research found no significant differences between the two groups quantitatively. Previous

studies suggest the value of longitudinal research as considering this methodological approach could suggest differences in the results (Quigley et al., 2018). For example, if this study considered a longitudinal element quantitatively the results may have been different with some participants potentially showing a decrease in mood and increase in wellbeing. However, previous research has also indicated the implications of longitudinal studies over a 6-month period which yielded high attrition rates so future research could consider a 3–4-month follow-up to indicate any differences to the results to of this study (Killien & Newton, 1990).

Although there are some limitations in the study, there are aspects of the study which could be considered as strengths. The MFQ (Angold & Costello, 1987) and QoL (Endicott et al, 1993) measures used to assess the validity of the BA programme have high internal validity and test-rest reliability, suggesting the legitimacy of this study. The study demonstrates the value a short 30-minute BA programme can be effective in reducing low mood and increasing wellbeing in the short term. This programme could facilitate practitioners as it could be applied as a first line of treatment for less severe depressive symptoms providing individuals with more governance and authority over their wellbeing. Additionally, it could help reduce waiting times for individuals who are waiting to receive CBT as it can also form a component to allowing the individual to comprehend their goals and what they want to achieve if they want to continue with therapy and how they can use their time sufficiently to address their needs. Thus, it could be a consideration to place BA within the NICE guidelines around CBT. This could facilitate BA as being a form of a drop-in service providing individuals with the choice to attend the programme prior to starting more intense therapy.

The purpose of having two groups was to understand the effectiveness of the SSBA programme. Despite researchers controlling the duration of both the SSBA programme and

the control condition the content was subjective to the participants perspective. In addition to this, there was a reduction of bias as the researcher did not deliver any content of the programme, the participants had to actively engage to take part in the conditions. This was important to understand the value of the SSBA programme and whether it would be more superior in reducing mood and increasing wellbeing to the control condition.

The value of the qualitative research allowed a more thorough examination of the usefulness of the SSBA programme. Without this data, the assumption would have been that the SSBA programme would not be suitable for the general population and more research needs to be considered to allow further progression in the field.

Applied recommendations

When using this programme, it is important to apply the core content into the single session. As reported earlier, the core contents allow the individual to comprehend what could be considered at each stage and how this could inform them to create positive attainable goals. Practitioners could consider being more selective when applying this programme as it may not be suitable for all depressive symptomology but could help reduce low mood and increase well-being over a short period of time. Future, longitudinal research may indicate that it could be used as a supplement to one-to-one therapy as it provides individuals with the autonomy to comprehend their behaviours and actions and apply solutions to decrease avoidance behaviours. This may also indicate to be a valuable tool for individuals on the waiting list so could be used as an extra therapeutic tool prior to the individual starting therapy.

Future recommendations could also encourage the use of the programme not only in the mental health field but also as a useful tool in schools and workplaces. For instance, in schools it can be used to encourage the use of positive behaviours at a younger age whereby children learn to maintain such behaviour to increase well-being. Similarly, we could

consider this approach in the workplace where an individual can be encouraged by employers to complete this 30-minute programme to facilitate goal progression. Therefore, this tool has implications to be used not only in the psychological field but could possibly expand into several fields with additional research. Additionally, as the research was conducted within England it could be considered to be applied on a larger scale such as within the United Kingdom or even with Europe within individuals easily accessing the programme online. This could be considered utilising a cross sectional larger scale RCT considering SSBA, Mindfulness and a third comparator group over a longer period of time to attain more thorough and rigorous findings.

Conclusions

The study explored the effectiveness of a BA programme as a single session on an online platform. As a short-term therapy with increasing evidence in reducing depressive symptoms, it is integral to consider the applicability of the programme on an online platform. With many services being available online this would be a useful mode of treatment for individuals to access. This would also take into consideration the increased pressure and staff burnout reported in the Kings Fund (2020) with such issues potentially having a direct effect on the quality of care of not only the individual requiring the support but also the staff with their increased workload. Thus, by making the programme accessible online individuals would have the autonomy to complete the programme without any support from a practitioner.

SSBA using Marwedel & Dubicka (2014) manual as an online programme has the potential to support and facilitate individuals experiencing low mood or reduced wellbeing. Thus, it can be considered as a first-line treatment which would be accessible, affordable, and informative. This would reduce pressure on practitioners whilst also allowing individuals to access support before starting collaborative therapies such as CBT. However, more research

does need to be considered on the long-term effects of the programme and how the strategies in the programme are used by individuals to inform more positive behaviours to encourage an increased wellbeing.

Reflexive statement

In the following section I will be acknowledging my subjectivity in the research process and recognise the influence it has had on the results of the paper.

As a female, Muslim Pakistani in her mid-20s I felt somewhat overlooked whenever I completed an educational milestone such as my degree and continued to the next stage. I was born in Manchester and have lived here my entire life not really exploring anything outside of England, hence was normalised to the norms and values of the westernised society. At times due to this I felt as though I could not connect with other Pakistanis and tried to often mimic others who looked like me to belong. Growing up in a working-class family and belonging to a BAME background I felt marginalised and disadvantaged at times as academics and colleagues disregarded my work making me feel inferior and unappreciated. I soon realised I need to carve my own path and as Fisher et al (2015) argue I started to become an 'internal supervisor' judging my every move, trying to fit in society and for once be noticed. Thus, I worked hard not only to maintain my culture and religion in such an individualistic country but was determined to break this contextual stereotype and became the first person in my family to complete a MSc and progress to a doctoral level.

Table 4.1 Sabah's Johari's Window

Female, Muslim, Pakistani, Wear a headscarf, Introvert, Mental Health Practitioner, Academic	I have been told at times I trying to support people more than my capacity and sometimes am too nice to people especially when their behaviour is unacceptable.
Find it difficult to tell anyone everything. Sometimes find it difficult to trust people. Feel quite insecure because of judgements and expectations.	Personal Therapy Supervision

Taking into consideration my cultural and socio-economical background I had no influences pushing me towards the psychological field as most individuals who looked just like me were teachers or solicitors, but I wanted to be different. I was determined to pursue a career in something I enjoyed rather than something that was deemed valuable to the community. This allowed me to frame my educational approach whereby I was introduced to Psychology and Sociology which changed my previous teachings on social norms and values. At first, I was told that Psychology and Sociology are studies for individuals with strong minds and those who were academically intelligent which did make me feel undervalued, yet I knew I could challenge this and become recognised for my work in this discipline. I realised very early into studying Psychology and Sociology that they do intersect with one another which helped me create a unique viewpoint on my understanding on the disciplines.

I was introduced to Behavioural Activation (BA) which has been a part of my professional life since 2018. It began when I came across an NHS project where BA was the prominent intervention to help reduce adolescent depression and increase their mood. I instantly felt attracted to BA and wanted to know how I can utilise my skills in helping promote the intervention. As a brief intervention I was aware that I can attract more individuals from the BAME community as it is a programme designed to support individuals but does not require much commitment. As mental health is often overlooked in the BAME community I was encouraged to utilise this programme and encourage the wider community how beneficial it can be.

When I was offered to continue studying on a Professional Doctorate, I knew immediately what I wanted to incorporate into my thesis. I acknowledge that I am bias towards BA as I was trained in BA more personally due to the purposes of my MSc project yet felt as though the use of BA was important not just for me professionally but also mentally. The reason for this, is because I felt as though BA helped me in increasing my

mood and promoting my well-being which were not the primary outcomes of the BA programme. I wanted to take this a step further and promote the well-being of others especially when the COVID-19 pandemic reduced the overall well-being of many individuals. This bias not only impacted my professional career, encouraging me to promote BA more but also allowed me to become more aware of my ever-changing positionality in the psychological field.

As reflected in the methodology paper I had barriers when trying to gain approval for the BA project. A few weeks after I had gained approval to start the project, I was unable to continue with the project due to the COVID-19 restrictions. I was very dejected at the time as something I was very passionate about could no longer continue. Despite this, I still felt as though I needed to explore BA but in a different format and was further encouraged to explore it once my MSc findings were utilised in a research publication (Dubicka et al, 2022). I am happy I had continued as I feel as though I have learnt so much more from this experience as I would have not considered the use of an RCT if the original project went ahead.

From this experience I was able to comprehend that I am bias towards BA because I believe in the programme. Not only did I conduct an SLR over a short period of time to maintain my commitment to BA I also condensed the content to a single session to reduce individual commitment. Upon reflection, if I had more time to complete the SLR I would have potentially learnt much more about BA. Additionally, as I was the primary reviewer for the SLR I feel that I may have been bias with the studies selected as I was more focused on seeing positive results. However, I feel that from applying a robust design in the empirical study by using an RCT and applying a mixed methods approach I was able to conduct valuable research. Likewise, the study findings show the quantitative group analysis results as being insignificant and this reflects my approach as a researcher in this field reducing any

bias. I aim to continue working with BA to grow and learn as an individual, academic and practitioner to facilitate and address individual needs.

References

Akobeng, A.K. (2005) Understanding randomised controlled trials. *Archives of Disease in Childhood*

American Psychological Association (APA) (2017) *Trends report: Technology is revolutionizing practice*. [Online] [Accessed 2nd September 2022] Trend report: Technology is revolutionizing practice (apa.org)

American Psychological Association (APA) (2021) *Online therapy is here to stay COVID-19 dramatically impacted psychology practice. What does the future of telepsychology hold?* (Online) [Accessed 1st September 2022] Online therapy is here to stay (apa.org)

Arjadi, R., Nauta, M.H., Scholte, W.F., Hollon, S.D., Chowdhary, N., Suryani, A.O., Uiterwaal, C.S.P.M., Bockting, C.L.H. (2018) Internet-based behavioural activation with lay counsellor support versus online minimal psychoeducation without support for treatment with depression: A randomised controlled trial in Indonesia. *The Lancet Psychiatry*

Armento, M.E.A., McNulty, J.K., Hopko D.R. (2012) Behavioral activation of religious behaviors (BARB): Randomised trial with depressed college students. *Psychology of religion and spirituality,* 4 (3) pp. 206-222

Braun, V., Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 pp.77-101

Byrne, B.E., Rooshenas, L., Lambert, H.S., Blazeby, J.M. (2020) A mixed methods case study investigating how randomised controlled trials (RCTs) are reported, understood and interpreted in practice. *BMC Medical Research Methodology,* 20

Bowman, A.W., Turner, M.J. (2022) When time is of the essence: The use of rational emotive behavior therapy (REBT) informed single-session therapy (SST) to alleviate

social and golf-specific anxiety, and improve wellbeing and performance in amateur golfers. *Psychology of Sport and Exercise*, 60

Carroll, S., Moss-Morris, R., Hulme, K., Hudson, J. (2021) Therapists' perceptions of barriers and facilitators to uptake and engagement with therapy in long-term conditions. *British Journal of Health Psychology,* 26 pp. 307-324

Chan, A.T.Y., Sun, G.Y.Y., Tam, W.W.S., Tsoi, K.K.F., Wong, S.Y.S. (2017) The effectiveness of group-based behavioral activation in the treatment of depression: an updated meta-analysis of randomised controlled trial. *Journal of Affective Disorders*

Chakrabarti, S (2015) Usefulness of telepsychiatry: A critical evaluation of videoconferencing-based approaches. *World Journal of Psychiatry*, 5 (3) pp. 286-304.

Chess, L.E., Gagnier, J. (2013) Risk of bias of randomized controlled trials published innorm orthopaedic journals. *BMC Medical Research Methodology,* 13

Chong, S.A., Capps, B.J., Subramaniam, M., Voo, T.C., Campbell, A.V. (2010) Clinical research in times of pandemics. *Public Health Ethics,* 3 (1) pp. 35-38

Christensen, H., Griffiths, K.M., Jorm, A.F. (2004) Delivering interventions for depression by using the internet: randomised controlled trial

Coward, M. (2011) Does the use of reflective models restrict critical thinking and therefore learning in nurse education? What have we done? *Nurse Education Today,* 31 (8) pp. 883-886

Critical Appraisal Skills Programme (2020) *CASP Randomised Controlled Trial standard checklist* [Online] [Accessed 1st September 2022] CASP CHECKLISTS - CASP - Critical Appraisal Skills Programme (casp-uk.net)

Cuijpers, P., Straten, A.V., Warmerdam, L. (2007) 'Behavioral Activation Treatments for Depression: A Meta-analysis' *Clinical Psychology Review,* 27 pp. 318-326

De Salis, I., Tomlin, Z., Toerien, M., Donovan, J. (2008) Using qualitative research methods to improve recruitment to randomised controlled trials: the quartet study. *Journal of Health Services Research,* 13 (3) pp. 92-96

Dimidjian, S., Goodman, S.H., Sherwood, N.E., Simon, G.E., Ludman, E., Gallop, R., Welch, S.S., Boogs, J.M., Metcalf, C.A., Hubley, S., Powers, J.D., Beck, A. (2017) A randomized clinical trial of behavioral activation for depressed pregnant women. *Journal of Consulting and Clinical Psychology,* 85 (1) pp. 26-36

Dobson, K.S., Hollon, S.D., Dimidjian, S., Schmaling, K.B., Kohlenberg RJ, Gallop R, Rizvi SL, Gollan JK, Dunner DL, Jacobson NS.(2008) Randomized Trail of Behavioural Activation, Cognitive Therapy, and Antidepressant Medication in the Prevention of Relapse and Recurrence in Major Depression. *Journal of Consulting and Clinical Psychology,* 76 (3) pp.468-477

Dubicka, B., Marwedel, S., Banares, S., McCulloch, A., Tahoun, T., Hearn, J., Kroll, L. (2022) Feasibility study of a new Behavioural Activation programme for young people with depressed mood. *Child and Adolescent Mental Health,* 27 (2) pp. 131-137

Ekers D, Richards D, McMillan D, Bland JM, Gilbody S. (2011) Behavioural Activation delivered by the Non-Specialist: Phase II Randomised Controlled Trial. *The British Journal of Psychiatry*, 198(1) pp. 66-72

Faber, J., Fonseca, L.M. (2014) How sample size influences research outcomes. *Dental Press Journal of Orthodontics,* 19 (4) pp. 27-29

Fessel, F., Epstude, K., Roese, N.J. (2009) Hindsight bias redefined: it's about time. *Organizational Behavioural Human Decision Processes,* 110 (1) pp. 56-64

Fontenelle, L.F., Miguel, E.C. (2020) The impact of COVID-19 in the diagnosis and treatment of obsessive-compulsive disorder. *Depression and Anxiety,* 37 (6) pp. 510-511

Funderburk, J.S., Pigeon, W.R., Shepardson, R.L., Wade, M., Acker, J., Fivecoat, H., Wray, L.O., Maisto, S.A. (2021) Treating depressive symptoms among veterans in primary care: A multi-site RCT of brief behavioral activation. *Journal of Affective Disorders,* 283, pp. 11-19

Garg, A.X., Hackam, D., Tonelli, M. (2008) Systematic Review and Meta-analysis: When one study is just not enough. *Clinical Journal of American Society of Nephrology,* 3 pp. 253-260

Gawrysiak, M., Nicholas, C., Hopko, D.R. (2009) Behavioral activation for moderately depressed university students: Randomized controlled trial. *Journal of Counselling Psychology,* 56 (3) pp. 468-475

Higgins, J.P.T., Altman, D.G., Gotzsche, P.C., Juni, P., Moher, D., Oxman, A.D., Savovic, J., Schulz, K.F., Weeks, L., Sterne, J.A.C. (2011) The Cochrane collaboration's tool for assessing risk of bias in randomised trails. *BMJ*

Hopko, D.R., Armento, M.E.A., Robertosn, S.M.C., Ryba, M., Carvalho, J.P., Johanson, L., Mullane, C., Gawrysiak, M., Bell, J.L., McNulty, J.K., Lejuez, C.W. (2011) Brief behavioral activation and problem-solving therapy for depressed breast cancer patients: Randomised Trial. *Journal of Consulting and Clinical Psychology*

Hopko, D.R., Lejeuz, C.W., Ryba, M.M., Shorter, R.L., Bell, J.L. (2016) Support for the efficacy of behavioural activation in treating anxiety in breast cancer patients. *Clinical Psychologist,* 20, pp. 17-26

Huguet A, Miller A, Kisley S, Rao S, Saadat N, McGrath PJ. (2018). A Systematic Review and Meta-analysis on the Efficacy of Internet-delivered Behavioural Activation. *Journal of Affective Disorders*. 235 pp.27-38

Jacobson NS, Martell CR, Dimidjian S. (2001) Behavioral Activation Treatment for Depression: Returning to Contexual Roots. *Clinical Psychology: Science and Practice*. 8 (3) pp. 255-270

Jelinek, L., Arlt, S., Moritz, S., Schroder, J., Westermann, S., Cludius, B. (2020) Brief web-based intervention for depression: Randomized controlled trial on behavioral activation. *Journal of Medical Internet Research,* 22 (3)

Johannsen, R., Zak, P.J. (2020) Autonomy raises productivity: An experiment measuring neurophysiology. *Frontiers in Psychology,* 11

Jia, R., Ayling, K., Chalder, T., Massey, A., Broadbent, E., Coupland, C., Vedhara, K. (2020) Mental health in the UK during the COVID-19 pandemic: cross-sectional analyses from a community cohort study. *BMJ Open*

Kendall, J.M. (2003) Designing a research project: randomised controlled trials and their principles. *Emergency Medical Journal,* 20 pp. 164-168

Knittle, K., Gellert, P., Moore, C., Bourke, N., Hull, V. (2019) Goal Achievement and Goal-Related Cognitions in Behavioral Activation Treatment for Depression. *Behavior Therapy,* 50 pp. 898-909

Kocalevent, R-D, Hinz A, Brähler E. (2013) Standardization of the depression screener patient health questionnaire (PHQ-9) in the general population. *General Hospitality Psychiatry*, 35 pp. 551–555

Konietschke, F., Schwab, K., Pauly, M. (2021) Small samples sizes: A big data problem in high-dimensional data analysis. *Statistical Methods in Medical Research,* 30 pp. 687-701

Lejeuz CW, Hopko DR, Hopko SD. (2001) A Brief Behavioral Activation Treatment for Depression: Treatment Manual. *Behavior Modification*. 25 (2) pp.255-286

Lerardi, E., Bottini, M., Crugnola, C.R. (2022) Effectiveness of an online versus face-to-face psychodynamic counselling intervention for university students before and during the COVID-19 period. *BMC Psychology*

Lorenzo-Luaces, L., Dobson, K. (2019) Is behavioral activation (BA) more effective than cognitive therapy (CT) in severe depression? A reanalysis of a landmark trial. *International journal of Cognitive Therapy*, 12 pp. 73-82

Löwe, B., Decker, O., Müller, S. (2008) Validation and standardization of the generalized anxiety disorder screener (GAD-7) in the general population. *Medical Care*, 46 pp.266–274

Ly, K.H., Truschel, A., Jarl, L., Magnusson, S., Windahl, T., Johansson, R., Carlbring, P., Andersson, G. (2014) Behavioural activation versus mindfulness-based guided self-help treatment administered through a smartphone application: A randomised controlled trial. *BMJ Open,* 4(1)

Ly, K.H., Topooco, N., Cederlund, H., Wallin, A., Bergstrom, J., Molander, O., Carlbring, P., Andersson, G. (2015) Smartphone-supported versus full behavioural activation for depression: A randomised controlled trial. *Open Access*

MacPherson, L., Tull, M.T., Matusiewicz, A.K., Rodman, S., Strong, D.R., Kahler, C.W., Hopko, D.R., Zvolensky, M.J., Brown, R.A., Lejuez, C.W. (2010) Randomized controlled trial of behavioral activation smoking cessation treatment for smokers with elevated depressive symptoms. *Journal of Consulting and Clinical Psychology,* 78 (1) pp. 55-61

Malay, S., Chung, K.C. (2013) The choice of controls for providing validity and evidence in clinical research. *Journal of the American Society of Plastic Surgeons,* 130 (4) pp. 959-965

Marawel, S. Dubika, B. (2014) Behavioural Activation Manual

Mazzucchelli T, Kane R, Rees C. (2011) Behavioral Activation Treatments for Depression in Adults: A Meta-anlysis and Review. *National Institute for Health Research*

Mind (2020) *Covid 19 has affected my OCD* [Online] [Accessed 1st September 2022] Covid-19 has affected my ANXIETY | Mind

Mind (2021) *Accessing treatment and support during coronavirus* (Online) [Accessed 1st September 2022] Coronavirus - accessing mental health treatment and support | Mind, the mental health charity - help for mental health problems

Mir, G., Meer, S., Cottrell, D., McMillan, D., House, A., Kanter, J.W. (2015) Adapted Behavioural Activation for the Treatment of Depression in Muslims. Journal of Affective Disorders, 180 pp.190-199

Moradveisi, L., Huibers, M.J.H., Renner, F., Arasteh, M., Arntz, A. (2013) Behavioural activation v. antidepressant medication for treating depression in Iran: randomised trial. *The British Journal of Psychiatry: the Journal of Mental Science,* 202(3) pp. 204-211

National Alliance on Mental Illness (NAMI) (2018) *The comorbidity of anxiety and depression*. [Online] [Accessed 5th September 2022] https://www.nami.org/Blogs/NAMI-Blog/January-2018/The-Comorbidity-of-Anxiety-and-Depression

National Healthcare Service NHS (2021) *Low mood, sadness and depression* [Online] [Accessed 2nd September 2022] Get help with low mood, sadness or depression - NHS (www.nhs.uk)

National Healthcare Service NHS (2021) *Psychological Therapies: Reports on the use of IAPT services, England June 2021 Final…*[Online] [Accessed 2nd September 2022] Psychological Therapies: reports on the use of IAPT services, England June 2021 Final including reports on the IAPT pilots and Quarter 1 data 2021-22 - NHS Digital

National Institute of Health Care Excellence NICE (2022) (Online) [Accessed 1st September 2022] Overview | Depression in adults: treatment and management | Guidance | NICE

Normand, M.P. (2017) Less is more: Psychologists can learn more by studying fewer people. *Frontier Psychology*

OCD UK (2020) *Introduction to Obsessive Compulsive Disorder* [Online] [Accessed 1st September 2022] Introduction to Obsessive Compulsive Disorder | ANXIETY-UK

O'Cathain, A., Thomas, K.J., Drabble, S.J., Rudolph, A., Goode, J., Hewison, J. (2014) Maximising the value of combining qualitative research and randomised controlled trials in health research: the QUAlitative Research in Trials (QUART) study – a mixed methods study. *Health Technology Assessment,* 18 (38)

Office for National Statistics (ONS) (2021) *Coronavirus and depression in adults, Great Britain: January to March 2021* [Online] [Accessed 2nd September 2022] Coronavirus and depression in adults, Great Britain - Office for National Statistics (ons.gov.uk)

O'Mahen, H.A., Woodford, J., McGinley, J., Warren, F.C., Richards, D.A., Lynch, T.R., Taylor, R.S. (2013) Internet-based behavioral activation – treatment for postnatal depression (Netmums): A randomized controlled trial. *Journal of Affective Disorders,* 150 (3) pp. 814-822

Opsal, T., Wolgemuth, J., Cross, J., Kaanta, T., Dickmann, E., Colomer, S., Erdil-Moody, Z. (2016) "There are no know benefits…" Considering the risk/benefit ratio of qualitative research. *Qualitative health research*, 26 (8) pp. 1137-1150

Page, M.J., Moher, D., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., et al (2020) PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews

Panchal, N., Kamal, R., Cox, C., Garfield, R. (2021) The implications of COVID-19 for mental health and substance use.

Pass, L., Whitney, H., Reynolds, S. (2016) Brief behavioural activation for adolescent depression: working with complexity and risk. *Clinical Case Studies*, 15 (5) pp. 360-375

Priory (2020) *Using online therapy during the COVID-19 outbreak* [Online] [Accessed 1st September 2022] The Benefits of Online Therapy | Priory (priorygroup.com)

Richards, D.A., Rhodes, S., Ekers, D., McMillan D, Taylor RS, Byford S, Barrett B, Finning K, Ganguli P, Warren F, Farrand P, Gilbody S, Kuyken W, O'Mahen H, Watkins E, Wright K, Reed N, Fletcher E, Hollan SD, Moore L, Backhouse A, Farrow C, Garry J, Kemp D, Plummer F, Warner F, Woodhouse R. (2017) Cost and Outcome of BehaviouRal Activation (COBRA): A Randomised Control Trial of Behavioural Activation Versus Cognitive Behavioural Therapy for Depression. *Health Research Assessment*. 21 (46)

Roache, R. (2014) Why is Informed Consent Important? *Journal of Medical Ethics*, 40 (7) pp. 435-436

Ross, J., Teesson, M., Lejuez, C., Mills, K., Kaye, S., Brady, K., Dore, G., Prior, K., Larkin, X., Cassar, J., Ewer, P., Mervedovic, S., Kihas, I., Masters, S.L. (2016) The Efficacy of BA Treatment for Co-occurring Depression and Substance Use Disorder (The Activate Study): A Randomized Controlled Trail. BMC Psychiatry. 16 (221) pp.1-14

Royal College of Psychiatrists (RC Psych, 2022) *CBT helping overcome mental health problems as nearly 2 million appointments take place in 2021*. [Online] [Accessed 30th September 2022] CBT helping overcome mental health problems as nearly 2 million appointments take place in 2021 (rcpsych.ac.uk)

Rück C, Larsson KJ, Lind K, Perez-Vigil A, Isomura K, Sariaslan A, (2015) Validity and reliability of chronic tic disorder and obsessive-compulsive disorder diagnoses in the Swedish National Patient Register. *BMJ Open*

Ryan, R.M., Lynch, M.F., Vansteenkiste, M., Deci, L.E. (2011) Motivation and autonomy in counselling, psychotherapy, and behavior change: A look at theory and practice. *The Counseling Psychologist,* 39 (2) pp. 193-260

Saisanan Na Ayudhaya, W., Pityaratstian, N., Jiamjarasrangsi, W. (2020) Effectiveness of behavioral activation in treating Thai older adults with subthreshold depression residing in the community. *Clinical Interventions in Aging,* 14, pp. 2363-2374

Saleh, A., Bista, K. (2017) Examining factors impacting online survey response rates in educational research: Perceptions of graduate students. *Journal of MultiDisciplinary Evaluation,* 13 (29) pp. 63-74

Schneider, J., Sarrami Foroushani, P., Grime, P., Thornicroft, G. (2014) Acceptability of online self-help to people with depression: User's views on MoodGYM versus Informational websites. *Journal of Medical Internet Research*, 16 (3)

Sibbald, B., Roland, M. (1998) Understanding Controlled Trials – Why are randomised controlled trials important? *British Medical Journal,* 316 pp. 201

Skinner B. F. (1938) The Behavior of organisms: An experimental analysis. *New York*: *Appleton-Century*

Straus, S.E., Sackett, D.L. (1998) Using research findings in clinical practice. *BMJ*

Sugarman, J., McCrory, D.C., Hubal, R.C. (1998) Getting meaningful informed consent from older adults: A structured literature review of empirical research. *American Geriatrics Society,* 46 (4) pp. 517-524

Sun, Y.Y., Wong, S.Y.S., Chan, A.T.Y., Leung, M.K.W., Chao, D.V.K., Li, C.C.K., Chan, K.K.H., Tang, W.K., Mazzucchelli, T., Au, A.M.L., Yip, B.H.K. (2018) Treating subthreshold depression in primary care: A randomized controlled trial of behavioral activation with mindfulness. *Annals of Family Medicine,* 16 (2) pp. 111-119

Takagaki, K., Okamoto, Y., Jinnin, R., Mori, A., Nishiyama, Y., Yamamura, T., Yokoyama, S., Shiota, S., Okamoto, Y., Miyake, Y., Ogata, A., Kunisato, Y., Shimoda, H., Kawakami, N., Furukawa, T.A., Yamawaki, S. (2016) Behavioral activation for late adolescents with subthreshold depression: A randomised controlled trial. *European Journal of Child and Adolescent Psychiatry,* 25 (11) pp. 1171-1182

The Kings Funds (2020) *NHS workforce: our position* [Online] [Accessed 2nd September 2022] NHS workforce: our position | The King's Fund (kingsfund.org.uk)

Veale, D. (2008) Behavioural Activation for Depression. *Advances in Psychiatric Treatment,*14 pp. 29-36

Viertio, S., Kiviruusu, O., Piirtola, M., Kapiro, J., Korhonen, T., Marttunen, M., Suvisaari, J. (2021) Factors contributing to psychological distress in the working population, with special reference to gender difference. *BMC Publish Health,* 21

Warttig, S.L., Forshaw, M.J., South, J. (2013) New, normative, English-sample data for the short form perceived stress scale (PSS-4). *J Health Psycholo*gy, 18 pp. 1617–1628

Widener, A. (2020) Journal publishers promote flexibility during COVID-19 pandemic. *Chemical Engineering News,*

Wilder, K.E., Weinberger, D.R., Goldberg, T.E., (1998) Operant conditioning and the orbitofrontal cortex in schizophrenic patients: unexpected evidence for intact functioning. *Schizophrenia Research*.30 pp. 169-174

Xie, J., He, G., Ding, S., Pan, C., Zhang, X., Zhou, J., Iennaco, J.D. (2019) A randomized study on the effect of modified behavioral activation treatment for depressive symptoms in rural left-behind elderly. *Psychotherapy Research: Journal of the Society of Psychotherapy Research,* 29 (3) pp. 372-382

Zabihi, S., Lemmel, F.K., Orgeta, V. (2020) Behavioural activation for depression in informal caregivers: A systematic review and meta-analysis of randomised controlled clinical trials. *Journal of Affective Disorders,* 274, pp. 1173-1183

Ethical Approval Document

16/07/2021
Project Title: SSBA Training Programme Online for OCD

EthOS Reference Number: 32684

Ethical Opinion

Dear Sabah Aliya Banares,

The above amendment was reviewed by the Health, Psychology and Social Care Research Ethics and Governance Committee and, on the 16/07/2021, was given a favourable ethical opinion. The approval is in place until 01/11/2021 .

Conditions of favourable ethical opinion

Application Documents

Document Type	File Name	Date	Version
Additional Documentation	Participant-Information-Sheet with changes	08/07/2021	1.5
Additional Documentation	Consent-form with changes	08/07/2021	1.1
Additional Documentation	Protocol signed	14/07/2021	1.5
Additional Documentation	Response to reviewers comments	14/07/2021	1.5

The Health, Psychology and Social Care Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make further changes to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

We wish you every success with your project.

HPSC Research Ethics and Governance Committee

HPSC Research Ethics and Governance Committee

For help with this application, please first contact your Faculty Research Officer. Their details can be found here

Appendix

Appendix 1 – Questionnaires - MFQ & QoL

MOOD AND FEELINGS QUESTIONNAIRE: Short Version

This form is about how you might have been feeling or acting **recently**.

For each question, please check (✔) how you have been feeling or acting ***in the past two weeks***.

If a sentence was not true about you, check NOT TRUE.
If a sentence was only sometimes true, check SOMETIMES.
If a sentence was true about you most of the time, check TRUE.

Score the MFQ as follows:
NOT TRUE = 0
SOMETIMES = 1
TRUE = 2

To code, please use a checkmark (✔) for each statement.	**NOT TRUE**	**SOME TIMES**	**TRUE**
1. I felt miserable or unhappy.			
2. I didn't enjoy anything at all.			
3. I felt so tired I just sat around and did nothing.			
4. I was very restless.			
5. I felt I was no good anymore.			
6. I cried a lot.			
7. I found it hard to think properly or concentrate.			
8. I hated myself.			
9. I was a bad person.			
10. I felt lonely.			
11. I thought nobody really loved me.			
12. I thought I could never be as good as other people.			
13. I did everything wrong.			

Quality of Life Enjoyment and Satisfaction Questionnaire – Short Form (Q-LES-Q-SF)

Taking everything into consideration, during the past week how satisfied have you been with your.....

	Very Poor	Poor	Fair	Good	Very Good
.....physical health?	1	2	3	4	5
.....mood?	1	2	3	4	5
.....work?	1	2	3	4	5
.....household activities?	1	2	3	4	5
.....social relationships?	1	2	3	4	5
.....family relationships?	1	2	3	4	5
.....leisure time activities?	1	2	3	4	5
.....ability to function in daily life?	1	2	3	4	5
.....sexual drive, interest and/or performance?*	1	2	3	4	5
.....economic status?	1	2	3	4	5
.....living/housing situation?*	1	2	3	4	5
.....ability to get around physically without feeling dizzy or unsteady or falling?*	1	2	3	4	5
.....your vision in terms of ability to do work or hobbies?*	1	2	3	4	5
.....overall sense of well being?	1	2	3	4	5
.....medication? (If not taking any, check here _____ and leave item blank.)	1	2	3	4	5
.....How would you rate your overall life satisfaction and contentment during the past week?	1	2	3	4	5

Appendix 2 – PRISMA Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection	8	Specify the methods used to decide whether a study	

Section and Topic	Item #	Checklist item	Location where item is reported
process		met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of	11	Specify the methods used to assess risk of bias in the	

Section and Topic	Item #	Checklist item	Location where item is reported
bias assessment		included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical	

Section and Topic	Item #	Checklist item	Location where item is reported
		heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study	17	Cite each included study and present its characteristics.	

Section and Topic	Item #	Checklist item	Location where item is reported
characteristics			
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	
Reporting	21	Present assessments of risk of bias due to missing	

Section and Topic	Item #	Checklist item	Location where item is reported
biases		results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	

Section and Topic	Item #	Checklist item	Location where item is reported
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	

Appendix 3 – Search Terms

1. Behavio* activation
2. Psychological Distress
3. Anxiety
4. Depression
5. 2 AND 3 AND 4
6. 2 OR 3 OR 4
7. 1 AND 6

Appendix 4 – CASP RCT Checklist

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Study and citation: .....

Section A: Is the basic study design valid for a randomised controlled trial?			
1. Did the study address a clearly focused research question? *CONSIDER:* *Was the study designed to assess the outcomes of an intervention?* *Is the research question 'focused' in terms of:* • *Population studied* • *Intervention given* • *Comparator chosen* • *Outcomes measured?*	Yes ☐	No ☐	Can't tell ☐
2. Was the assignment of participants to interventions randomised? *CONSIDER:* • *How was randomisation carried out? Was the method appropriate?* • *Was randomisation sufficient to eliminate systematic bias?* • *Was the allocation sequence concealed from investigators and participants?*	Yes ☐	No ☐	Can't tell ☐
3. Were all participants who entered the study accounted for at its conclusion? *CONSIDER:* • *Were losses to follow-up and exclusions after randomisation accounted for?* • *Were participants analysed in the study groups to which they were randomised (intention-to-treat analysis)?* • *Was the study stopped early? If so, what was the reason?*	Yes ☐	No ☐	Can't tell ☐

Section B: Was the study methodologically sound?			
4. • **Were the participants 'blind' to intervention they were given?** • **Were the investigators 'blind' to the intervention they were giving to participants?** • **Were the people assessing/analysing outcome/s 'blinded'?**	Yes ☐ ☐ ☐	No ☐ ☐ ☐	Can't tell ☐ ☐ ☐
5. Were the study groups similar at the start of the randomised controlled trial? *CONSIDER:* • *Were the baseline characteristics of each study group (e.g. age, sex, socio-economic group) clearly set out?* • *Were there any differences between the study groups that could affect the outcome/s?*	Yes ☐	No ☐	Can't tell ☐

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6. Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)? *CONSIDER:* • *Was there a clearly defined study protocol?* • *If any additional interventions were given (e.g. tests or treatments), were they similar between the study groups?* • *Were the follow-up intervals the same for each study group?*	Yes ☐	No ☐	Can't tell ☐

Section C: What are the results?

7. Were the effects of intervention reported comprehensively? *CONSIDER:* • *Was a power calculation undertaken?* • *What outcomes were measured, and were they clearly specified?* • *How were the results expressed? For binary outcomes, were relative and absolute effects reported?* • *Were the results reported for each outcome in each study group at each follow-up interval?* • *Was there any missing or incomplete data?* • *Was there differential drop-out between the study groups that could affect the results?* • *Were potential sources of bias identified?* • *Which statistical tests were used?* • *Were p values reported?*	Yes ☐	No ☐	Can't tell ☐
8. Was the precision of the estimate of the intervention or treatment effect reported? *CONSIDER:* • *Were confidence intervals (CIs) reported?*	Yes ☐	No ☐	Can't tell ☐
9. Do the benefits of the experimental intervention outweigh the harms and costs?	Yes ☐	No ☐	Can't tell ☐

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Section D: Will the results help locally?			
10. **Can the results be applied to your local population/in your context?** *CONSIDER:* • *Are the study participants similar to the people in your care?* • *Would any differences between your population and the study participants alter the outcomes reported in the study?* • *Are the outcomes important to your population?* • *Are there any outcomes you would have wanted information on that have not been studied or reported?* • *Are there any limitations of the study that would affect your decision?*	Yes ☐	No ☐	Can't tell ☐
11. **Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?** *CONSIDER:* • *What resources are needed to introduce this intervention taking into account time, finances, and skills development or training needs?* • *Are you able to disinvest resources in one or more existing interventions in order to be able to re-invest in the new intervention?*	Yes ☐	No ☐	Can't tell ☐

APPRAISAL SUMMARY: *Record key points from your critical appraisal in this box. What is your conclusion about the paper? Would you use it to change your practice or to recommend changes to care/interventions used by your organisation? Could you judiciously implement this intervention without delay?*

The table below describes the CASP RCT checklist against the 11 questions designed to help understand the research papers. The 11 questions are explained above. The tool allowed the understanding that the study designs all had high validity indicating how useful and imperative it was to explore the purpose of the systematic review using RCTs. This is further supported by section B of the tool (questions 4-6) which indicated the methodological quality of the studies was good. Overall, demonstrating the use of the CASP tool allowed a further

understanding of how useful RCT research can be in signifying the effectiveness of an approach as well as allowing a further understanding of how useful the papers are in exploring the validity and reliability of the methods used.

Table 3. *CASP RCT Checklist*

	1	2	3	4	5	6	7	8	9	10	11
Arjadi et al (2018)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**	**Y**	**CT**
Armento et al (2012)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Dimidjian et al (2017)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Gawrysiak et al (2009)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Funderburk et al (2021)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Hopko et al (2011)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Moradveisi et al (2013)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Jelinek et al (2020)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Ly et al (2014)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Ly et al (2015)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Saisanan Na Ayudhaya et al (2020)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Macpherson et al (2010)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Zabihi et al (2020)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Sun et al (2018)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Xie et al (2019)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
O'Mahen et al (2013)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**	**Y**	**CT**
Takagaki et al (2016)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**
Huguet et al (2018)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**CT**	**Y**	**CT**

Appendix 5: Qualitative follow-up questions

4. What do you think were the bad aspects of the programme?
5. Did you find the programme useful? If so, in what way? If not, why not?
6. Was the programme easy to take part in? Or was it difficult? Please explain your answer
7. What would you recommend in order to improve the programme?