Evaluating the Effectiveness of Personalized Pleasant Activities and Validation Therapy to Increase Mood in a 65 Male with Intellectual Disability and Dementia.

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For the purpose of confidentiality any identifying factors of the participant have been withheld from this thesis.
Dedication

This thesis is dedicated to my mother, who without her constant love and support I would not be here today.
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Nic Turcotte
Thank you for being a support and light in my life for the last 10 years of friendship. Without you, I could not have completed these four years.

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Abstract

The purpose of this case study was to examine the effectiveness of the combination of Validation Therapy (VT) and Personalized Pleasant Activities (PPA) to increase mood in a participant with dementia and an intellectual disability. It was hypothesized that the participant’s mood would increase after 2 weeks of intervention, which included 5 sessions of VT and 5 sessions of PPA. The participant was a 65-year-old white male who had a diagnosis of dementia and an intellectual disability. Results indicated the client’s mood increased from baseline mean of 2.8 to post-intervention mean of 3.8 as measured on a likert scale. The statistical significance of the increase in mood was $p < 0.002$. The Becks Depression Inventory II was used to assess depression at the pre-and post intervention. Pre-intervention test indicated a result of 27 on the BDI-II, moderate depression, and post-intervention test indicated a result of 20 on the BDI-II, borderline clinical depression. It was recommended that future studies explore using VT and PPA to increase mood in a larger sample size to enhance research on this topic. Limitations, strengths, future recommendations, and contributions to the field of behavioural psychology were also discussed.
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Chapter I: Introduction

Dementia is a disease that affects roughly 1.1 million Canadians daily, whether it is those directly affected by the disease or those who are caring or supporting someone with this illness (Chambers, Bancej, & McDowell, 2016). Although this illness is quite prevalent in Canada, there is little research being completed on dementia and intellectual disabilities and practical supports for this population. The life expectancy of the general population and those living with dementia has increased over the last decade, as there have been numerous technical advances in medicine. Dementia will continue to become more prevalent in everyday life as there are an estimated 25,000 new diagnoses each year; this number is expected to grow by 66% by 2031 (Chambers, Bancej, & McDowell, 2016). While the numbers for both life expectancy and dementia keep increasing, there have not been many studies on people who live with both dementia and an intellectual disability (ID). This population has a higher risk of getting dementia at an earlier age, as early as 40 in those with Down syndrome (Ballard, Mobley, Hardy, Williams, & Corbett, 2016). Dementia also occurs at higher rates for those with an intellectual disability compared to those of the general population (Ballard et al., 2016).

Continued research on individuals with dementia will add additional research in the field of psychology by discerning what dementia symptoms are most prevalent in this population and how caregivers can help support them. Intervention can then be personalized to this population by addressing the symptoms that are most likely to occur. Using interventions that help decrease overall symptoms while using specific activities a client likes makes it personalized to them.

Dementia can cause different symptoms in individuals and can differ especially when comparing the general population versus individuals with an ID. An intellectual disability is defined as significant limitations in intellectual functioning and everyday social and practical skill and behaviours (Definition of Intellectual Disability, 2013). Dementia is defined as a chronic disorder with the brain and the mental processes (What is Dementia?, n.d). There are numerous behavioural and psychological symptoms that accompany dementia such as aggressive behaviours, delusions and hallucinations, anxiety, eating disturbances, as well as sleep disorder (Devshi, Shaw, Elliott-King, Hogervorst, Hiremath, Velayudhan, Kumar, et al., 2015). However, the most common symptoms in those with an intellectual disability are aggression and sleep disturbances (Devshi et al., 2015).

There are a small sample of studies that provide research on ID and dementia. From these studies there are two interventions that target the specific symptoms happening in this population. Theses interventions are Validation Therapy (VT) and Personalized Pleasant Activities (PPA) approach. Validation therapy is based on the premise of validating and accepting another individual’s experiences and feelings without judgement. There is some research to suggest that this therapy reduces aggression, sleep disturbances and irritability (Feil, 1972). The other intervention with demonstrated effectiveness in reducing these symptoms in those with dementia and an ID was a PPA approach. Personalized Pleasant Activities involves staff using activities that the client finds rewarding or pleasant to increase mood. The developers of the PPA approach, Buettner and Fitzsimmons found this approach to be effective in increasing positive moods and reducing negative mood or depression (Buettner & Fitzsimmons, 2002). Both of these studies targeted the most predominant symptoms of dementia, found in those with an ID, which can both be used in a group-home or nursing home setting. It is hypothesized that
using both PPA and VT together will decrease depressive symptoms and increase mood in an individual living in with dementia and an intellectual disability in a group home setting.

Using these interventions would help in nursing homes or group homes where the validation therapy or PPA could be generalized to help multiple individuals at one time. This would lessen costs for patients, as group therapy generally is more cost-effective than individual therapy. The VT or PPA would also provide scheduled social interactions between client and staff and between two different clients. Reducing these symptoms may reduce aggression and sleep disturbances and increasing overall mood.

The literature review portion will examine empirically researched interventions and studies that used validation therapy and personalized pleasant activities to reduce symptoms found commonly in individuals with dementia. The methodology portion will outline the participant, research design, variables, and procedures used in the research study. The intervention will then be tested against the hypothesis, and the data will be interpreted through a visual analysis. Strengths and limitations of this research study will be analyzed and discussed and any recommendations for further research will be added.
Chapter II: Literature Review

Introduction
During the last decade or so, the age of persons with intellectual disabilities has steadily increased with the advancement of living conditions and medical advances (Scharlach, Simon, & Dal Santo, 2002). Increasing life expectancy has lead to dementia becoming a greater problem within this population, as advancing age is the greatest cause of dementia (Chambers, Bancej, & McDowell, 2016). Individuals with an ID in Canada is estimated to be 3.8 million adults as of 2012, and this accounts for roughly 13.7% of the adult population (Statistics Canada, 2015). While these statistics are quite high in numbers, there is little to no research on individuals with both diagnosed dementia and an ID. There is little known on whether the symptoms of dementia are different in those with intellectual disabilities, other than that individuals with Down syndrome have a higher chance of epilepsy (Johannsen, Christensen, Goldstein, Nielsen, & Mai, 1996).

The Alzheimer’s Society states that the middle stages of dementia or Alzheimer’s, are when individuals need to start looking for either 24-hour live-in care or moving into a residential facility, such as a group home or a nursing home (Help End Alzheimer’s, n.d.). Care for an individual with dementia falls upon the staff members, and when in group homes or residential facilities, there may be a lack of knowledge on diseases such as dementia due to lack of research. When given the appropriate training and knowledge, staff can assist the client better. Also, building a strong rapport with clients can increase compliance and help a client calm down in moments of distress. This can include things like staff being more concise when asking a client to complete an activity. Making a client feel calm in their own home is the goal of big agencies as well as the staff (CARF, 2017). Commission on Accreditation of Rehabilitation Facilities, who monitor the homes under agencies such as Community Living, promote quality, value, and optimal outcomes through the services of the accreditation process and continuous services to enhance the lives of persons served (“Quick Facts about CARF”, 2016). Having the staff equipped with both the knowledge of the disease, in addition to knowledge of interventions, may increase client quality of life.

Statistics of Dementia in Canada
In Canada, roughly 3% or 1.1 million individuals are directly or indirectly impacted by someone living with dementia (Chambers, Bancej, & McDowell, 2016). There are also roughly 564,000 Canadians currently living with dementia, with 25,000 new diagnoses every year (Chambers, Bancej, & McDowell, 2016). Canadians spend roughly 10.4 billion dollars annually to support those with dementia. Although there is no reported percentage of how many of people living with dementia also have an intellectually disability, the occurrence of individuals with both diagnoses is 4 times higher than the general population (Alzheimer's Society, 2004). This occurrence is even higher in those with Down Syndrome, some of which can have symptoms of dementia as early as 40 years old (Alzheimer's Society, 2004; Cooper & Holland, 2007). With such a high prevalence of dementia amongst individuals with intellectual disabilities, there is little to no research being done, leaving support workers and families unsure how to support their clients and loved ones.

Symptoms of Dementia
There are numerous behavioural and psychological symptoms that accompany dementia including aggressive behaviours, delusions and hallucinations, anxiety, eating disturbances, as well as sleep disorder (Devshi et al., 2015). Although some of these symptoms occur in the general population who have dementia, there is a slightly higher rate of sleep
disorders/disturbances in people with dementia and an intellectual disability, as well as a higher aggression rate (Tondi et al., 2007). Devshi et al. (2015) also found that 62.5% of all studies collected and reviewed, identified a high occurrence of sleep disturbances within the people who have both an ID and dementia. In the 23 studies the authors reviewed there was also a higher rate of occurrence of aggressive behaviours with the individuals who had both disorders. The authors also noted a higher rate of depression as up to 87% of patients described having some degree of depression symptoms (Duggan, Lewis, & Morgan, 1996; Cooper & Prasher, 1998 as cited by Devshi et al., 2015).

Validation Therapy

Validation therapy is not the most common therapy for individuals with dementia, and there has not been much research conducted. The two therapies that are most common in dealing with individuals with dementia are reminiscence therapy and reality orientation. Although these two therapies are the most common, they focus on reinforcement of where the individuals are physically, and reminding the clients of the time/date (Erdmann & Schnapp, 2012). Both of these therapies are useful, but do not address the emotional and psychological effects of dementia and short term memory loss (Spector, Davies, Woods, & Orrell, 2000; Morton, & Bleathman, 1991). Both reminiscence therapy and reality orientation therapy do not accept the hallucinations and delusions as part of the therapy. Both therapies try to focus the participant back into the correct time and place, rather than addressing the emotional connection to the hallucination. The major foundation for VT is assuming there is an underlying significance to the clients’ repeated speech, as an unresolved issue in the past (Morton & Bleathman, 1991). Therefore, it is important to the therapist or trained staff to use validating language when the client is having difficulty with speech instead of correcting superficial errors in their speech. Rather than judging the content of the conversation VT is founded on meeting the client where they are at and not challenging their frame of reference.

VT has a fairly fixed format of how the group therapy is supposed to run. Individual VT usually includes a maximum of 5 minute sessions, split up into three different periods in the day, three times a week. Individual VT sessions and group VT sessions are set up the same, with the sessions lasting roughly around 15-20 minutes, once a weekday and three times a week (Feil, 1972 as cited in Kim, 1991). Since the VT techniques are simple and there is no need for specialized education to use it, VT can be taught to all staff or family who support the client with dementia (Feil, 1972). The individual session begins with a client choice of song and goes into a discussion about a selected topic that they have chosen (Bleathman & Morton, 1988). The topic is centered on the common three topics of anger, separation, and loss; which have been brought up as concerns in a majority of the clients (Bleathman, & Morton, 1988). These topics get brought up by the group facilitators to discuss in the sessions. These topics let participants discover unresolved feelings about their family or staff, their admittance into a group home/nursing home, or their feelings about death for themselves or their romantic partners (Bleathman, & Morton, 1988). This format allows the individuals to open up to the staff or therapist as VT does not argue with the participant, but only actively listens to their concerns or story at that time (Feil, 1972). This openness between the client and staff works toward a better understanding and well-being.

According to Feil (1972), the use of group VT with individuals with dementia increased speech and contentment, while decreasing problems with incontinence, and negative mood (described as crying, pounding, and hitting). Over the 5-year intervention of VT with the same participants, there was also an increase in positive mood and well-being, with an increase
specifically in smiling, talking, and offering to help others (Feil, 1972). Feil (1972) also found that the use of VT causes considerably less burnout symptoms for both the families of the participant, as well as the staff. Furthermore, VT was found to prevent the participants with severe dementia from retreating further into time confusion, unless they have had a major brain injury or stroke (Feil, 1972). Time confusion is defined as a lack of awareness regarding time of day, month, or season, and increased impairments in short-term memory (Feil, 1972). Feil discovered that using the VT, leads to an increase in energy during social interactions and increased verbal communications, thus improving social behaviours (Feil, 1972). Gräsel, Wiltfang, and Kornhuber (2003) found the aspect of communication of VT, which is based on empathy and genuine regard for the client, is an empirically supported method for caring for and guiding individuals with dementia. An improved amount of energy during social interactions in those with dementia shows that the VT decreases the symptoms of depression. One of the symptoms includes trying to isolate oneself and avoid social interaction altogether (Mayo Clinic Staff, 2016). The results of VT alone indicate an increase in positive feelings with characteristics such as positive comments, smiling, laughing and an increase of eye and body contact (Feil, 1972). D’Alfonso, La Barbera, Siviero, and Cerri (2012) found that VT on its own shows an increase in a positive mood, with a decrease of negative mood or depression. D’Alfonso et. al (2012) used VT on 20 participants ranging in age from 70 to 89, all within the early stages of dementia. The study used a special tool to detect neurophysiological and somatic links of the emotional reactions pre- and post-treatment as well as using video recording to analyze body language throughout the session. D’Alfonso et. al (2012) also used Galvanic Skin Resistance to observe emotion arousal and using Heart Rate Variability to track intervals between heart beats as instruments for tracking emotion.

Although individuals with a disability make up a higher percentage of those diagnosed with dementia (Ballard et. al, 2016), the thesis author could only discover articles focused solely on those with a diagnosis of dementia, leaving a gap in the research.

**Personalized Pleasant Activities**

Using personalized pleasant activities is also a fairly new treatment design, as the only mention of “personalized pleasant activities” is in the 2014 article by Testad et al. These activities can be implemented one-on-one with an individual with dementia, or within a group setting (Testad et. al., 2014). Examples of PPA include therapeutic biking, simulated presence therapy, dance, or visual arts. Any activity that a client finds reinforcing or provides them with happiness or contentment. These items would be scheduled around the participants normal routine. Across 10 different studies using PPA, the treatment sessions usually happened between 1-2 times per week, lasting from 30 minutes to 4 hours and intervention differentiated from 1 week, to 36 weeks (Testad et. al, 2014).

A study by Cohen-Mansfield, Libin, and Marx (2007) noted that there was a statistically-significant decrease in levels of verbal agitation ($p=.004$) and physical non-aggressive agitation ($p<.001$) in the participants with mild to severe dementia when using PPA as a primary intervention. As a secondary result of PPA, there was also a statistically significant increase in pleasure within the participants (Cohen-Mansfield et. al, 2007). This was discovered through individualized sessions to account for the participant becoming tired, if they participant was ill, or if the participant refused (Cohen-Mansfield et. al, 2007). Although there was still a decrease with the control group (decrease of .95), the intervention group found a greater decrease in agitation (decrease of 1.94) (Cohen-Mansfield et al., 2007). The intervention consisted of but not limited to, personalized music, building blocks, cards, books, puzzles etc. (Cohen-Mansfield et.
al, 2007). Treatment Routes for Exploring Agitation (TREA) was used with the intervention group, which is finding a personalized treatment plan for each participant. TREA has several steps for finding an appropriate treatment such as; finding the etiology of the agitated behaviour, finding the strengths and limitations of the participant, recognizing the deficits of the participant especially mobility, sensory and cognitive deficits, any unique characteristics (hobbies, past work, important relationships, etc.) and any accommodations or flexibility that will be needed (Cohen-Mansfield et al., 2007). It was noted in the research that there was a small change within the negative mood, but not enough to be statistically significant (Cohen-Mansfield et al., 2007).

Cohen-Mansfield et al. (2012) demonstrated the correlation between PPA and an increase of pleasure and interest, while decreasing agitation. Relative to the control group, the study found a decrease in not only a total agitation ($p<.001$), but found a decrease in physical non-aggressive agitation ($p<.001$), and in verbal agitation ($p=.004$) (Cohen-Mansfield et al., 2012). This study also used the TREA method to find a personalized treatment plan for the intervention group to differ from the control group. Although each participant had a different treatment plan, only generalized treatments were listed such as in the previous study by Cohen-Mansfield et al., 2007.

Both studies used a placebo-controlled clinical trial to reduce agitation in individuals with dementia without using pharmacological interventions. These studies both used PPA without pharmacological interventions to demonstrate interventions without medication are successful in treating symptoms of dementia such as low mood and agitation. Although in both studies, the control group did see a decrease in agitation, the intervention group saw a greater decrease. Both studies used the TREA method to find activities that were specific to the participant. It was noted that one of the most important ideologies of the studies was finding a PPA that suited the clients’ needs, preferences, and ability levels. Without this personalized piece of the intervention, the study would not have been successful, due to the participants not being as passionate about the activities (Cohen-Mansfield et al., 2012). If staff or the researcher does not spend enough time getting to know the participant, the intervention will not be personalized to them. The authors noted the importance of a full interview and assessment of the clients needs, capabilities, limitations, and rewarding activities to ensure that the PPA interventions were tailored to each individual client to be as successful as possible. Not knowing the participants wants and needs well enough could create the participant engaging in an activity that they do not enjoy, which may negatively impact treatment effectiveness.

Buettner and Fitzsimmons (2002) studied individuals with dementia in a long-care facility using bicycles to ride on while one-on-one with staff. The therapy sessions were 30 minutes, 2 times a week, for 12 weeks. Buettner & Fitzsimmons demonstrated that the use of a preferred therapeutic activity decreased depression significantly within 2 weeks of the intervention beginning and the decrease was sustained throughout the 10-week maintenance after intervention (Buettner & Fitzsimmons, 2002).

Neither study completed a cost-evaluation of all objects used in the interventions, but most featured inexpensive PPA’s such as going on a walk around the neighbourhood. These low-cost purchases ($10-$15) are much lower than the cost of medication for depression, which can range, dependent on insurance, from $1,000 to over $3,000 (Scott-Clarke, 2011). This could be a fair amount of money for an individual on pension rather than ODSP. There was not a discussion on which factor, one-on-one time or the activity, was contributing to the decrease in depression symptoms. Without an intervention separating the one-on-one time, from the activity, it cannot be concluded which aspect had the greater impact on the depressive symptoms.
It has been found that the use of a PPA such as *TimeSlips* (a story-telling program), decreases agitation and increases mood. To be specific, it has been found that the use of TimeSlips increases communication, focus, pleasure, and improved the neuropsychiatric symptoms of dementia (Basting, 2003; Gerdner, 2000 as cited in Phillips et al., 2010). TimeSlips is a group storytelling program, which encourages open communication while stimulating a participant’s imagination. This program allows participants to focus on their created fantasy world, rather than relying on memory, to tell a story. In doing so, it takes the frustration of not remembering out of the equation, and focuses on the positive of what the participant can accomplish (TimeSlips Creative Storytelling Project, 2010 as cited in Phillips et al., 2010). The TimeSlips intervention has a group setting, with chairs set up in a circle, and in individual sessions, the chairs would be set up across from each other. The session started out with a funny or interesting picture being passed around to participants as they are given the instructions to start telling a piece of the story. While the participants were telling the story, the facilitators wrote down the combined story. At the end of the intervention, pleasure scores were significantly higher \((p < .05)\) in the treatment group, than the control group. The social communication scores were higher in the treatment group, and the levels of depression were lower in the treatment group, although these were not statistically significant (Phillips, Reid-Arndt, & Pak, 2010). As noted with VT, none of the studies on PPA have been tested with individuals who are diagnosed with both dementia and an ID although depression is a highly prevalent symptom of dementia found in those with an ID.

Using a cost effective method of intervention that includes PPA has been found to decrease symptoms of dementia (agitation), or depression, while increasing positive mood attributes such as communication, pleasure, and focusing (Cohen-Mansfield et. al, 2007; Cohen-Mansfield et. al, 2012; Phillips, Reid-Arndt, & Pak, 2010). There are many benefits to PPA, with little to no negative side effects. The clients get one-on-one or group interactions, while engaging in activities personalized to them, and receiving attention at the same time. In settings such as group or nursing homes, where a majority of clients do not get individual time with staff or family, PPA is a step towards increasing quality of life and a general well-being for the client. This could be one of the faults of PPA, as it is hard for organizations to acquire enough hours for staff to have the one-on-one time with clients. Individual PPA requires at least one staff to be available with no distractions for roughly an hour, 1-2 times a week. This might not seem like an excessive amount of time, but if in a residence or nursing home where there is only one staff available, the clients’ needs, such as medications, come before an hour long PPA session.

**Overview of Validation Therapy and Personalized Pleasant Activities**

Planning an intervention as early as possible with the most common symptoms of dementia and a disability, would prepare the staff on what to expect from their client before it happens, as well as best approaches to symptom management. Testad et al. (2014) found that using personalized activities significantly decreased depression in the patients with dementia. Feil (1982 as cited in Testad et al., 2014) created this therapy to offer realistic solutions to the challenges individuals with dementia and their caregivers encounter. With both individual and group sessions using VT, there has been a decrease in dementia-related behaviours such as aggression, irritability, and night-time disturbances (Tondi et al., 2007 as cited by Testad et al., 2014). Using a pairing of both VT and PPA may decrease depressive symptoms such as low mood, agitation, and low social interactions. The pairing of VT and PPA will also increase characteristics of positive mood such as smiling, laughing, eye and body contact, and an increase in conversation and social interactions. Using the two therapies may help in reducing the highest
prevalence symptoms such as mood and aggression in those with a disability and dementia, therefore giving a more fulfilled life.

**Summary**

Preparing for the lives of all who are in the residential facility is the job of all the staff workers. Creating a plan that can be put in place before the client’s dementia deteriorates and the symptoms increase, may help with meeting the clients’ changing needs. Both VT and PPA are low-cost, and low-time interventions. These are helpful characteristics of therapy in group or nursing home settings, where there are not always enough resources and staff available. The low cost is also beneficial for the clients, as many are on a fixed income. Using low-cost treatments such as these allows the clients to use their money where it is most effective; for instance, buying medical supplies, paying for doctor or dentist appointments, or achieving goals. If measures such as PPA and VT are established at the beginning stages of dementia or Alzheimer’s disease, it may ease the clients’ transition into full-time intervention or treatment. It may be less confusing for the client, because once a treatment is in place, it will start to become part of a client’s day to day routine. Using both PPA and VT ensures the treatment will cover the most common symptoms in those with dementia and an ID. Therefore, if VT and PPA work successfully as treatment, the client should show an increase in mood, and a decrease in depressive symptoms. This success will also create an intervention that will specifically target a population with a higher statistical chance of being diagnosed with dementia.
Chapter III: Methodology

Participant and Selection Procedure

Due to a limited number of participants, a case study was completed to explore the effects of having dementia and an intellectual disability. The participant was a 65-year-old male, diagnosed with an intellectual disability as well as dementia. Participant selection was based on the two residential facilitators who wanted to acquire more knowledge about the participant’s dementia, and how to best support his specific symptoms arising from the disease. There were no exclusion criteria because the research subject and hypothesis was developed specifically for this participant. The initial assessment and baseline behavioural data collection was developed from the feedback from the group home facilitators. Feedback was given regarding the proposed treatment by the staff and house facilitators/supervisors approved of the intervention.

Informed Consent and Ethical Approval

This research project was approved by the St. Lawrence College Research Ethics Board (Appendix B). Informed consent was discussed with the participant, and one of the residential facilitators helped explain in a manner the participant understood. It was explained to the participant before the approval that the behavioural psychology student would be working with him, and him having support was not contingent on him participating in the study. Once approved by the Ethics Board, the participant signed and dated the Consent form (Appendix A). There were two copies of the consent form; one copy was kept by the agency, and the participant kept the other.

Design

A repeated measures experimental design was used to analyze the data collected. The independent variable was composed of the VT and PPA. The dependent variable was the participant’s mood as scored with the Beck’s Depression Inventory II (Appendix D). The research project was implemented for a period of two weeks. A daily record of the participant’s mood was also be marked on a likert scale with the use of “smiley faces” as a numbered rating (Appendix C). Each “smiley face” has a corresponding number for graphs and data collection. Changes to the score of the BDI-II were used to measure the effectiveness of the intervention on decreasing depression symptoms.

Dependent Variables

Depression. Depression was defined as a mood disorder causing sadness and a loss of interest. Symptoms of depression include but are not limited to negative self-talk, changes in appetite or sleep patterns, feelings of worthlessness, etc. Depression was measured with the scores obtained from the BDI-II during pre and post assessment.

Positive mood. Mood is defined as a state of feeling at a particular time. Mood was measured with a 5-point likert scale during baseline and intervention to observe a change.

Independent Variables

Validation Therapy. Validation therapy is based on the belief of validating and accepting another individual’s experiences and feelings without judgement. An example situation being a participant reporting a hallucination of their mother and helping her with laundry, the validation therapist would say “Your mother worked very hard, you wanted to help her, you love your mother very much, don’t you?” (Feil, 1972). It is important to validate their
feelings that the hallucination is giving them, such as sadness if their mother has passed, without validating that the hallucination is real, or that their mother is actually in the room with them.

**Personalized Pleasant Activities:** Personalized pleasant activities focuses on using pleasant activities, specific to the participant, to involve participants with stimuli promoting creativity, self-efficacy, and an overall well being (Testad et al., 2014). All interventions are tailored to each participant and based on their interests/hobbies, strengths, limitations, and their skill level. An example of PPA would be a participant working on an activity such as sanding a rocking chair, or knitting dependant on if the individual finds that a pleasant activity and are capable of moving their hands for a period of time. For this participant, what he found reinforcing as a pleasant activity was discovered through casual conversation during the first week of my placement.

**Setting and Materials**

The research study was conducted at the residential facility where the participant lives. The behavioural psychology student was at the group home 5 days a week, and collected the mood scale data from Monday to Friday. The data on the weekend was collected by the other staff in the facility. During the evenings, Monday to Friday is when the VT and PPA took place. For VT, this was completed in the living room of the facility or in the basement, where it is more private for the participant to speak freely. For PPA, it was completed either in the living room to engage in smaller activities such as colouring or word searches, and would take place downstairs for bigger tasks like wood working.

**BDI-II.** Sample statements from the BDI-II include “I do not feel sad”, “I feel sad”, “I am sad all the time and I can’t snap out of it.”, and “I am so sad and unhappy that I can’t stand it.” The participant answered answer what statement felt truest to their emotional state pre and post interventions. This would indicate a number to add up, and come to a conclusion on how severe their depression is. The statements are rated 0-3, and the scoring chart consists of four severity levels of depression; “minimal depression”, “mild depression”, “depression”, and “severe depression”. The BDI-II, which was developed by Beck (1996) is a self-report questionnaire with 21 questions used to measure the severity of symptoms commonly associated with depression. The BDI-II has shown a high one-week test-retest reliability (Pearson r=0.93), and also has a high internal consistency (α=.91). The test also has a positive-correlation with the Hamilton Depression Rating Scale, showing good agreement between the similar instruments. Using the BDI-II as a pre- and post- measure of depression symptoms, it showed the symptom severity, and a measure of the participant’s response to intervention.

**Mood scale.** A 5-point likert scale was used to determine the participants’ mood on a daily basis. This scale ranged from 1 which was a crying face to a 5 which was an excited face. The participant was shown this scale on a daily basis during baseline and intervention, roughly within the same time period. The client would point to which “smiley” he identified with feeling that day, and the data would be written down.

**Procedure**

The participant engaged in the treatment of PPA and VT around his existing schedule with day programs. The study was implemented over a 4-week period; two weeks for baseline data and two weeks for intervention. The participant took part in 3 weekly sessions of VT and PPA. Session were held Tuesday, Thursday, and Friday for approximately an hour each. During this time, the participant worked on a PPA activity for roughly half hour, then conversed with the
behavioural psychology student using VT. The sessions were run by the behavioural psychology student. The participant completed the BDI-II following the treatment period of the research project. The completed copy of the BDI-II was taken by the behavioural psychology student, and was kept in a locked closet in the residential facility. This would help ensure confidentiality of the participant.

The participant completed a baseline assessment of BDI-II prior to the beginning of the study. This questionnaire was also completed at the end of the treatment phase. The participant was read the questions, and asked to verbally answer. The behavioural psychology student recorded the verbal answers on the questionnaire. The participant was provided with PPA materials such as colouring pages and crosswords. For the bigger activities in PPA, the participant provided the rocking chair.

**Data Analysis**

A repeated measures design was used to analyze the data in the research study. The statistical analysis of the dependent variable included an ANOVA test, in order to determine a statistical difference between the baseline and intervention data. Descriptive statistics were used to show variation and standard deviation of the BDI-II scores. The participants BDI-II score was analyzed and presented as a bar graph while the mood scale is presented as a line graph. A more in depth analysis of data and findings is located in the results section.
Chapter IV: Results

It was hypothesized that the use of VT and PPA would increase mood in a 65-year-old man with dementia and an intellectual disability. Before baseline data was collected, both agency facilitators were interviewed to determine which behaviours in the group home could be modified, and whom treatment would benefit more. Both facilitators noted that the participant’s mood had been down, and that negative self-talk would be made out loud. Naturalistic direct observations took place after the interview, and the behavioural psychology student also recognized instances of negative self-talk around conversations of dying, not having a good day, or of not being good enough or strong enough to complete a task. A pre- and post-test was completed using a BDI II and a 5-point likert scale used to measure mood throughout the 4 weeks; two weeks of baseline data as well as two weeks of intervention data. The graph representing the mood scale data is shown below. The BDI II measured the participant’s depression before and after the two-week intervention of PPA and VT.

Outcome Measures

BDI-II Pre and Post Test. The participants BDI-II score decreased from a rating of “moderate depression” (27) before treatment started to a score of “borderline clinical depression” (20) after the two-week intervention was completed. This decrease between the pre-test and the post-test was a treatment difference of 25.93%.

Daily Mood Scale. The participant was presented a card with the 5-point likert scale daily for 2 weeks of baseline and 2 weeks of intervention. The 5-point likert scale with “smiley faces” is shown in Appendix C. The participant would inform the instructor which “face” he felt on that particular day, and the correlating number would be recorded. The measured effect on mood was statistically significant, with a mean increase of 1 point on the 5-point likert scale from 2.8 during baseline to 3.8 during intervention. The trend line in Figure 1 shows an increasing trend from baseline to intervention. The statistical significance of the increase in mood was p. < 0.002. Figure 1 shows the change in mood with the use of the 5-point likert mood scale during baseline and intervention.

Analysis

A visual analysis was conducted to evaluate the effectiveness of the intervention. Stability, mean, median, standard deviation, and the percentage of points exceeding the median (PEM) were calculated.

Baseline

Stability refers to the number of data points that fall within 25% (12.5% above and below) of the median in each phase (Tawny & Gast, 1984). In baseline, the mean was a score of 2.78 and the median was 3. To calculate stability, the mean (2.78) was multiplied by 0.125 (equalling 0.347). The product was then added as well as subtracted from the score of 2.78 to reveal the 25% range. The range was between a score of 2.43 and a score of 3.12. Seven out of fourteen data points were in the range (50%). This data was not stable; however, due to time constraints, the intervention had to begin.

Intervention

The mean score during baseline was 2.78 and the mean score during intervention was 3.8. Treatment improvement was 38.7% from baseline to intervention ([3.8 – 2.78]/2.78 x 100). During baseline, the median score was 3 and a score of 4 in intervention. Treatment
improvement was 33% \([\frac{4 - 3}{3} \times 100]\). In addition, standard deviation increased from .975% in baseline to 1.014 in intervention.

PEM (Scruggs & Mastroperi, 1998) was calculated by drawing a line across the baseline median (3) and counting how many data points were above the median. The number was then divided by the total number of data points in the phase and multiplied by 100%. PEM was 75.9% during intervention. According to Scruggs, Mastroperi, Cook, and Escobar (1986), a PEM score from 70-90% indicates a moderately effective intervention.

![Figure 1](image)

*Figure 1.* shows two weeks of baseline data and two weeks of intervention data using a 5-point likert scale to measure mood.
Chapter V: Conclusion and Discussion

Summary

This study explored the effectiveness of validation therapy and personalized pleasant activities to increase mood in a man with an intellectual disability and dementia. Prior to baseline data being collected and intervention being implemented, the participant was communicating self-deprecating thoughts to staff. Some of these thoughts were about how he could not complete a task, or about his frustrations with his aging body. However, after 2 weeks of intervention, 5 sessions of PPA and 5 sessions of VT, the participant’s mood increased. This study was one of the first to implement an intervention using both VT and PPA to increase mood in an individual with dementia. This study was supported by past literature that utilized VT to increase mood while decreasing symptoms of depression. Past literature of PPA also supported the study with reference to the effectiveness of PPA for increasing mood.

During the study, the participant actively took part in PPA and VT and communicated his excitement for one-on-one time. The interventions alternated between VT and PPA dependant on a prescheduled alternation. Before the intervention phase was implemented, the participant completed a Beck Depression Inventory II to assess pre- and post-intervention scores on depression. This was analysed to determine effectiveness, as indicated in the results the participants score on the BDI-II decreased. The participant rated his feelings on a 5-point likert scale daily during both the baseline and intervention. During PPA sessions, the participant commonly works on sanding his rocking chair, as it was his favourite activity to do. During VT the participant discussed any fears or upsetting emotions he was having, discussing past memories, and his typical day-to-day life in the residential facility.

Strengths

The VT and PPA therapy was based on empirical literature and best practices for individuals with dementia. The participant lived in a group home in a community agency and had constant supervision, structure, and support within the staffing team. If for any reason the client was being negatively impacted from treatment, there was staff available 24/7 to hear his concerns. The research facilitator was at the residential facility for 14 weeks in total, and was able to build a strong report with the participant before therapy/intervention began. A therapeutic alliance was built through daily interaction with the participant, as well as one to one community outings. The participant verbally reflected in session that he was enjoying the “talking sessions”, as well as the activities completed one to one. The participant was fully engaged in the therapy, and talked during the full 45 minutes of all VT sessions. There was only one participant in the study and treatment was more personalized to the participant allowing it to be more effective. Another strength of the study is that the intervention took place in an applied setting, allowing the participant to easily generalize the therapy and activities to his day-to-day life. The activities were already set up in the house which enabled the residential staff team to continue with maintenance of PPA.

Limitations

As with any study, there are limitations and due to time restraints this study had several. One limitation was the delay in approval from the Ethics Board. This set the intervention back about a month, therefore intervention did not start until the 14th week of the placement decreasing the length of the intervention. Since all of the dates for baseline and treatment were pushed back, this also changed the intervention from the scheduled four weeks, to two weeks of
intervention. This might have decreased treatment effectiveness, as there were only 5 sessions of each VT and PPA.

Another limitation was the small sample size. Although the findings were statistically significant, a larger sample sizes would produce a more accurate finding and stronger support for VT and PPA rather than a case study. There was also no control group or return to baseline completed for this study, thus decreasing the validity on whether the increase in mood was a direct result of participation in VT and PPA.

**Multilevel Challenges**

**Client Level**

During this study, the participant was supposed to bring up a concern or fear he had each week during the VT sessions. Due to the participant’s dementia, he would bring up the same story multiple times during the session and fixate on completing it. Although any concern or emotion around the story had been thoroughly discussed, the same story had been discussed multiple times without the participant remembering. Although this was technically a barrier, using VT the participant would be validated on his story, his feelings, and what he was focused on in the story, each time he discussed it.

**Program Level**

The main concern at the program level and implementation was the time restraints. Awaiting approval from the ethics board made it difficult to complete a two-week intervention, not a four-week intervention that was originally planned. Another smaller concern was working the intervention around the participant’s set routine. There is a constant routine in the residential facility regarding when the client completes his hygiene routines, take medications, or go to bed. This was a challenge to find a time when the intervention could be implemented on a day to day basis.

**Organizational Level**

The challenge at the organizational level was getting every single staff member in the house on board with the intervention regarding daily data collection during baseline and intervention. When the residential facility had a staff meeting, staff training was completed where staff could ask questions about the intervention for the participant to increase facilitator buy in.

**Societal Level**

From a societal viewpoint, the knowledge of dementia is very limited. In the residential facility, the staff team in general was not clear on the symptoms of dementia, and how they could best support the participant. Each staff had a different background through social work, nursing, behavioural psychology, child and youth care worker, etc., yet no staff member knew that the participant’s mood change could be a direct result of the dementia. At a societal level there seems to be little information about dementia among individual with a developmental disability, and about the respite services offered for families. Having the knowledge of what dementia looks like in different individuals would help all staff members, in this organization and other like it, to best support their client and their growing needs.
Implications on the Behavioural Psychology Field

The present thesis project contributes to the behavioural psychology field by providing a study with two treatments that have not been used together before. Thus allowing for a new treatment method for individuals with dementia as well as an intellectual disability. This thesis project created a resource for staff to understand their clients a little better, and recognize there can be changes in mood with dementia.

Recommendations for Future Research

For future research, it would be ideal to use a larger sample size for validity of the treatment. If a larger sample size was used, individuals of a different gender, age, and individuals without an intellectual disability, it would be easier to discern the effectiveness of VT and PPA. A larger sample size would also provide more valid and reliable data. Further research should continue to look at using both PPA and VT, and including PPA without social interaction as a control group. Using PPA without social interaction will also discount for the one-on-one time for the participant with facilitator as a causation variable of the change in mood.
References


Appendix A: Consent Form
Evaluating the Effectiveness of Personalized Pleasant Activities and Validation Therapy to Increase Mood in a 65 Male with Intellectual Disability.

Principal Investigator (Student): Shayna Williams
College Supervisor: Bria Sherwood
Institution: St. Lawrence College

You have been invited to take part in a research study regarding dementia. I am a student in my fourth year of the Behavioural Psychology program at St. Lawrence College. I am currently on placement at Community Living Kingston. As part of this placement, I am completing a research project (called an applied thesis). I would like to ask you for your help to complete this project. The information in this form will help you understand my project. Please read the information carefully and ask all the questions you might have before you decide if you would want to take part.

This project is a research-based study on best treatments for people with both dementia and a disability. I believe research on this topic will help increase the staff’s knowledge of this disorder, and how to make going through this stage of your life easier.

If you choose to take part in this study, you will be asked by a staff member or myself how you are feeling each day based on a sheet with five smiley faces ranging from happy to sad. We will talk about dementia, how it might affect you, and some activities that may make you feel better. I will also help you answer some questions at the start and at the end of the 4 weeks that we will work together to find out how you have been feeling. During our discussions, I will listen attentively to you and validate your experiences and feelings. You will be encouraged to participate in pleasant and creative activities during the day.

The potential benefits of you taking part in this research may include feeling more positive and participating in the pleasant and creative activities. In addition, staff members may increase their knowledge of dementia and how to help you when you are not having a good day.

Risks from taking part in this research study are minimal, but may include feeling a little upset when discussing difficult topics.

Every individual is different. If you have a strong reaction towards any of the information discussed, or any intervention taking place, you may speak further with myself.

We will make every attempt to keep any information that identifies you strictly confidential unless required by law. No names or identifiers will be used. The consent form, and data will be kept in a locked filing cabinet at the residential facility. The computer files with the study data will be kept in a password protected file on a secure, password protected computer. This form will be stored securely at either Community Living or St. Lawrence College for 10 years. All other research data will be stored securely for 7 years, after which time the data will be destroyed. Your name will not be used in any reports, publications, or presentations resulting from this project.
Taking part is voluntary. It is up to you to decide whether or not to participate. If you decide, you would like to take part, you will be asked to sign this consent form. If you decide to participate, you are still free to stop at any time without giving any reason or experiencing any penalty or negative effects. If you want to stop taking part, please notify me as soon as you can.

This research project has received ethical clearance from the Research Ethics Committee for Behavioural Psychology (REC-P) under the authority of the St. Lawrence College Research Ethics Board (SLC-REB). The project was developed under the supervision of Bria Sherwood, my supervisor from St. Lawrence College. I appreciate your cooperation and if you have any additional questions, feel free to ask me, Shayna Williams (SWilliams-banaszak12@sl.on.ca). You can also contact my College Supervisor Bria Sherwood (briasherwood@gmail.com). If you have concerns about the way this research is being conducted or about your rights as a participant, you may contact the SLC-REB Chair at reb@sl.on.ca.

If you agree to take part in this research project, please complete the following form and return it to me as soon as possible. A copy of this signed document will be given to you for your own records. We will keep an additional copy of your consent at Community Living.

By signing this form, I agree that

- The study has been explained to me
- All of my questions were answered
- Possible harm, discomforts and possible benefits to me have been explained to me.
- I understand that I have the right not to participate and the right to stop at any time without explanation or penalty.
- I am free now, and in the future, to ask any questions I have about the study.
- I have been told that my personal information will be kept confidential.
- I understand that no information that would identify myself will be released or printed without asking me first.
- I understand that I will receive a signed copy of this consent form.

I hereby consent for myself, _________________________ to take part.

______________________________________________
_____________________________
Name                     Signature               Date

____________________________________________________________________________
Student Researcher Printed Name   Signature of Student Researcher   Date
Appendix B: Ethics Board Proposal

Research Ethics Board Members
James Morris-Pocock (Chair)
Jill Dennis
Lavinia Inbar Marie-Line Jobin
Andrea Ruskin
Maria Othman
Jody Souka-Marleau

November 28, 2016

Student name: Shayna Williams
Student address: Swilliams-banaszak12@student.sl.on.ca ; 100 Portsmouth Ave, Kingston, ON K7L 5A6

SLC REB Reference Number: 2016-REC18WBS

Project Title: Evaluating the effectiveness of personalized pleasant activities and validation therapy to increase mood in a 65 male with intellectual disability

Dear Shayna Williams:

I am writing to advise you that the Research Ethics Committee – Psychology (REC-P), a subcommittee of the St. Lawrence College Research Ethics Board (SLC-REB), has granted Approval to the above-named research study. Your research may now begin.

You have one year to complete the project from the time of approval. Should you require more time to complete your project, you will be required to submit a SLC-REB Request for Renewal or Amendment Form to request an extension on your ethics approval for your project. This must be submitted prior to SLC-REB approval anniversary date.

Please review St. Lawrence College's Policy on Research Integrity. You are obligated to keep your files up to date and inform the SLC-REB of any changes to your study. Any changes to the approved protocol or consent materials must be reviewed and approved through the amendment process prior to its implementation. Both a SLC-REB Request for Renewal or Amendment Form and a revised application must be submitted to the Research Service Office for review by the SLC-REB.

Any adverse or unanticipated events during the course of your research must be reported to the SLCREB as soon as you become aware of them. The SLC-REB reserves the right to review your file at any time to ensure that research is being conducted in accordance

Once your project is complete, you are required to complete a Project Termination form. This form must be submitted as a final report about your research to the SLC-REB.

Best wishes for the successful completion of your project.

Best Regards,

Jamie, Morris-Pocock

Chair, Research Ethics Board
Appendix C: 5-point Likert Scale for Mood

Figure 2. shows the 5 point likert scale used during baseline and intervention to track mood.
Appendix D: Becks Depression Inventory II

<table>
<thead>
<tr>
<th>Beck Depression Inventory</th>
<th>Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFTN:________ CRF number:________ Page 14 patient initis:________</td>
<td></td>
</tr>
</tbody>
</table>

The BDI-II contains 21 questions, each answer being scored on a scale value of 0 to 3. The cutoffs used differ from the original: 0–13: minimal depression; 14–19: mild depression; 20–28: moderate depression; and 29–63: severe depression. Higher total scores indicate more severe depressive symptoms.

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Patterns) or Item 18 (Changes in Appetite).

<table>
<thead>
<tr>
<th>1. Sadness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I do not feel sad.</td>
</tr>
<tr>
<td>1 I feel sad much of the time.</td>
</tr>
<tr>
<td>2 I am sad all the time.</td>
</tr>
<tr>
<td>3 I am so sad or unhappy that I can't stand it.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Passivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I am not discouraged about my future.</td>
</tr>
<tr>
<td>1 I feel more discouraged about my future than I used to be.</td>
</tr>
<tr>
<td>2 I do not expect things to work out for me.</td>
</tr>
<tr>
<td>3 I feel my future is hopeless and will only get worse.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Past Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I do not feel like a failure.</td>
</tr>
<tr>
<td>1 I have failed more than I should have.</td>
</tr>
<tr>
<td>2 As I look back, I see a lot of failures.</td>
</tr>
<tr>
<td>3 I feel I am a total failure as a person.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Loss of Pleasure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I get as much pleasure as I ever did from the things I enjoy.</td>
</tr>
<tr>
<td>1 I don't enjoy things as much as I used to.</td>
</tr>
<tr>
<td>2 I get very little pleasure from the things I used to enjoy.</td>
</tr>
<tr>
<td>3 I can't get any pleasure from the things I used to enjoy.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Guilty Feelings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I don't feel particularly guilty.</td>
</tr>
<tr>
<td>1 I feel guilty over many things I have done or should have done.</td>
</tr>
<tr>
<td>2 I feel quite guilty most of the time.</td>
</tr>
<tr>
<td>3 I feel guilty all of the time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Punishment Feelings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I don't feel I am being punished.</td>
</tr>
<tr>
<td>1 I feel I may be punished.</td>
</tr>
<tr>
<td>2 I expect to be punished.</td>
</tr>
<tr>
<td>3 I feel I am being punished.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Self-Dislike</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I feel the same about myself as ever.</td>
</tr>
<tr>
<td>1 I have lost confidence in myself.</td>
</tr>
<tr>
<td>2 I am disappointed in myself.</td>
</tr>
<tr>
<td>3 I dislike myself.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. Self-Criticalness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I don't criticize or blame myself more than usual.</td>
</tr>
<tr>
<td>1 I am more critical of myself than I used to be.</td>
</tr>
<tr>
<td>2 I criticize myself for all of my faults.</td>
</tr>
<tr>
<td>3 I blame myself for everything bad that happens.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Suicidal Thoughts or Wishes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I don't have any thoughts of killing myself.</td>
</tr>
<tr>
<td>1 I have thoughts of killing myself, but I would not carry them out.</td>
</tr>
<tr>
<td>2 I would like to kill myself.</td>
</tr>
<tr>
<td>3 I would kill myself if I had the chance.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. Crying</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 I don't cry anymore than I used to.</td>
</tr>
<tr>
<td>1 I cry more than I used to.</td>
</tr>
<tr>
<td>2 I cry over every little thing.</td>
</tr>
<tr>
<td>3 I feel like crying, but I can't.</td>
</tr>
</tbody>
</table>
Appendix E: BDI-II Scoring

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
</table>
| 11. Agitation | 0 I am no more restless or wound up than usual.  
1 I feel more restless or wound up than usual.  
2 I am so restless or agitated that it's hard to stay still.  
3 I am so restless or agitated that I have to keep moving or doing something. |
| 12. Loss of Interest | 0 I have not lost interest in other people or activities.  
1 I am less interested in other people or things than before.  
2 I have lost most of my interest in other people or things.  
3 It's hard to get interested in anything. |
| 13. Indecisiveness | 0 I make decisions about as well as ever.  
1 I find it more difficult to make decisions than usual.  
2 I have much greater difficulty in making decisions than I used to.  
3 I have trouble making any decisions. |
| 14. Worthlessness | 0 I do not feel I am worthless.  
1 I don't consider myself as worthwhile and useful as I used to.  
2 I feel more worthless as compared to other people.  
3 I feel utterly worthless. |
| 15. Loss of Energy | 0 I have as much energy as ever.  
1 I have less energy than I used to have.  
2 I don't have enough energy to do very much.  
3 I don't have enough energy to do anything. |
| 16. Changes in Sleeping Pattern | 0 I have not experienced any change in my sleeping pattern.  
1a I sleep somewhat more than usual.  
1b I sleep somewhat less than usual.  
2a I sleep a lot more than usual.  
2b I sleep a lot less than usual.  
3a I sleep most of the day.  
3b I wake up 1-2 hours early and can't get back to sleep. |
| 17. Irritability | 0 I am no more irritable than usual.  
1 I am more irritable than usual.  
2 I am much more irritable than usual.  
3 I am irritable all the time. |
| 18. Changes in Appetite | 0 I have not experienced any change in my appetite.  
1a My appetite is somewhat less than usual.  
1b My appetite is somewhat greater than usual.  
2a My appetite is much less than before.  
2b My appetite is much greater than usual.  
3a I have no appetite at all.  
3b I crave food all the time. |
| 19. Concentration Difficulty | 0 I can concentrate as well as ever.  
1 I can't concentrate as well as usual.  
2 It's hard to keep my mind on anything for very long.  
3 I find I can't concentrate on anything. |
| 20. Tiredness or Fatigue | 0 I am no more tired or fatigued than usual.  
1 I get more tired or fatigued more easily than usual.  
2 I am too tired or fatigued to do a lot of the things I used to do.  
3 I am too tired or fatigued to do most of the things I used to do. |
| 21. Loss of Interest in Sex | 0 I have not noticed any recent change in my interest in sex.  
1 I am less interested in sex than I used to be.  
2 I am much less interested in sex now.  
3 I have lost interest in sex completely. |
INTERPRETING THE BECK DEPRESSION INVENTORY (BDI-II)
Add up the score for each of the 21 questions by counting the number to the right of each question you marked. The highest possible total for the whole test would be sixty-three and the lowest possible score for the test would be zero. This would mean you circles zero on each question. You can evaluate your depression according to the Table below.

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Levels of Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>= These ups and downs are considered normal</td>
</tr>
<tr>
<td>11-16</td>
<td>= Mild mood disturbance</td>
</tr>
<tr>
<td>17-20</td>
<td>= Borderline clinical depression</td>
</tr>
<tr>
<td>21-30</td>
<td>= Moderate depression</td>
</tr>
<tr>
<td>31-40</td>
<td>= Severe depression</td>
</tr>
<tr>
<td>over 40</td>
<td>= Extreme depression</td>
</tr>
</tbody>
</table>

A PERSISTENT SCORE OF 17 OR ABOVE INDICATES THAT YOU MAY NEED TREATMENT. ____________________

Appendix F: Mood Scale Raw Data
<table>
<thead>
<tr>
<th>Baseline</th>
<th></th>
<th>Intervention</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Score</td>
<td>Date</td>
<td>Score</td>
</tr>
<tr>
<td>14-Nov</td>
<td>3</td>
<td>13-Dec</td>
<td>4</td>
</tr>
<tr>
<td>15-Nov</td>
<td>3</td>
<td>14-Dec</td>
<td>5</td>
</tr>
<tr>
<td>16-Nov</td>
<td>2</td>
<td>15-Dec</td>
<td>4</td>
</tr>
<tr>
<td>17-Nov</td>
<td>3</td>
<td>16-Dec</td>
<td>3</td>
</tr>
<tr>
<td>18-Nov</td>
<td>3</td>
<td>17-Dec</td>
<td>4</td>
</tr>
<tr>
<td>19-Nov</td>
<td>5</td>
<td>18-Dec</td>
<td>4</td>
</tr>
<tr>
<td>20-Nov</td>
<td>2</td>
<td>19-Dec</td>
<td>2</td>
</tr>
<tr>
<td>21-Nov</td>
<td>3</td>
<td>20-Dec</td>
<td>3</td>
</tr>
<tr>
<td>22-Nov</td>
<td>3</td>
<td>21-Dec</td>
<td>5</td>
</tr>
<tr>
<td>23-Nov</td>
<td>2</td>
<td>22-Dec</td>
<td>3</td>
</tr>
<tr>
<td>24-Nov</td>
<td>4</td>
<td>23-Dec</td>
<td>4</td>
</tr>
<tr>
<td>25-Nov</td>
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