Activity Schedules to Increase the Use of Coping Techniques and Activity Engagement in Adults Diagnosed with Mental Health Disorders Who Experience Anxiety

by

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DEDICATION

I would like to dedicate this thesis to my family and friends who provided me with continuous support throughout my under-graduate education. I would have not been able to complete this milestone without you. All of you are very important people and I am blessed to have you in my life.
ABSTRACT

Anxiety disorders are common among individuals diagnosed with mental health disorders. Studies have shown that individuals diagnosed with mental illness(es) may experience anxiety due to isolation and limited activity engagement (McCormick, Funderburk, Lee, & Hale-Fought, 2005). A lot of research has focused on coping techniques to reduce anxiety, however, there is little research regarding ways to prompt the utilization of coping techniques. The purpose of this study was to use activity schedules to increase the utilization of progressive muscle relaxation and thought stopping. By increasing the utilization of those coping techniques it was hypothesized that anxiety would decrease and activity engagement would increase. The participants involved in the study were adult clients of a community mental health agency currently receiving support from the case management team. This study consisted of three case studies and used an AB design. The participants acquired the skills to utilize progressive muscle relaxation and thought stopping, and then created an activity schedule incorporating the two coping techniques and desirable activities to accomplish. This study successfully illustrated that participants were able to use activity schedules to increase independent use of coping techniques, which reduced anxiety and increased activity engagement. Despite the effectiveness of this study, further research should focus on generalization. In addition, this study only conducted individual sessions with the participants; therefore, future research should determine if this treatment would be effective in a group format.
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Chapter I: Introduction

Background

Anxiety has been defined as an emotional state characterized by feelings of fear and apprehension (McCormick, Funderburk, Lee, & Hale-Fought, 2005). Edmund Bourne (2005) reported that anxiety is a natural feeling that everyone experiences. However, when anxiety disrupts an individual’s daily function it becomes a problem that must be addressed. McCormick and his colleagues (2005) noted that anxiety affects the lives of individuals diagnosed with mental health disorders and this could be due to the isolation and limited activity engagement that is seen by those individuals. Many individuals diagnosed with mental health disorders tend to view leisure activities has burdens due to severe anxiety. In addition, it has been discovered that engagement in leisure activities among individuals diagnosed with mental health disorders was related to their quality of life (McCormick, Funderburk, Lee, & Hale-Fought, 2005). Despite that information, intense levels of anxiety are holding these individuals back from taking part in leisure activities. Thus, immediate attention should be give to this population to develop treatment plans that help reduce anxiety and increase activity engagement.

Rationale

Many researchers have studied various coping techniques and found that relaxation, thought stopping, anxiety management, social skills, and self reinforcement were all effective in reducing anxiety among individuals diagnosed with mental health disorders (Brown, 1980; Borkovec, Mathews, Chambers, Ebrahimi, Lytle & Nelson, 1987; Dodd & Wellman, 2000; Hannan & Tolin, 2005). However, not found in the literature was a way to prompt individuals to use and practice those coping techniques outside of training sessions. If researchers find a way to increase the utilization of coping techniques, then individual’s anxiety would decrease and their activity engagement would increase. One possible way to accomplish this would be to have individuals create an activity schedule indicating the times that they are going to utilize coping techniques within their personal environment. Activity schedules could be a beneficial method as they would cue individuals to utilize coping techniques, which would decrease their anxiety levels, thus allowing them to engage in additional activities.

The past fifty years has seen great advancements in the care of individuals diagnosed with mental health disorders (McCormick et al., 2005). The mental health perspective has shifted from institutional care to community care, with the goal of social integration and improving the quality of life among individuals. A study such as this one would follow the goal of community care as it hopes to improve the participants’ quality of life by decreasing anxiety levels and facilitate social integration by increasing activity engagement.

Hypothesis

It has been reported that there is limited research on treatments for older adults who experience anxiety (Ayers, Sorrell, Thorp & Wetherell, 2007). Therefore, the aim of this study was to contribute to the research of anxiety treatment for adults diagnosed with mental health disorders who experience anxiety. The focus of the study was to help individuals manage their anxiety levels and increase their activity engagements, which would likely increase their quality of life. It was hypothesized that if individuals use activity schedules that incorporates time to utilize coping techniques, such as progressive muscle relaxation and thought stopping, then individuals’ anxiety levels are likely to decrease and activity engagement will likely increase.
Overview

To understand the framework of this study, the literature regarding anxiety, coping techniques, and activity schedules was reviewed. The characteristics and types of anxiety was briefly reviewed, which was then followed by an examination of cognitive-behavioural therapy for treating anxiety disorders. Progressive muscle relaxation and thought stopping was discussed as they were the coping techniques chosen for this study to facilitate a reduction in anxiety. Activity schedules were appraised as a method to help increase the use of coping techniques, activity engagement, and allow individuals to make choices, create routines, and independent behaviours. The Beck Anxiety Inventory was evaluated and predictable general information about the assessment was provided as it was being used to measure anxiety levels. Positive reinforcement and self-monitoring were assessed to determine whether it would be beneficial to incorporate them into the study to help maintain the positive effects that coping techniques and activity schedules could produce. Finally, activity engagement among individuals diagnosed with mental health disorders was discussed.

Following the literature review there is a description of the methodology and results obtained from the study. The methodology section states a brief description of the participants, followed by explaining the design of the study. Materials that were used in the study are discussed, and then the setting of the study and the informed consent procedures are outlined. Lastly, the measures used in the study and the intervention procedures will be presented.

Following the methodology section the results section will discuss the degree to which the study was successful at decreasing anxiety levels and increasing activity engagement. The decrease in anxiety will be assessed by using the Beck Anxiety Inventory and the increase in activity engagement will be assessed by determining the frequency of activity engagements recorded on the participants’ activity schedules. Lastly, the discussion section will evaluate the effectiveness of the study, its strengths and limitations, and recommendations for future research.
Chapter II: Literature Review

Etiology of Anxiety

Anxiety, a feeling of fear and apprehension, is a natural feeling that everyone experiences (Davidson, Neale, Blankstein, Flett, 2005). However, when anxiety begins to take over an individual’s life it becomes a chronic problem that must be treated (Luchtman & Song, 2007). The difference between normal anxiety and chronic anxiety is that chronic anxiety lasts for longer periods of time, is more intense, and can lead to phobias which interfere with an individual’s life (Bournes, 2005). Anxiety disorders have been shown to affect 16% of women and 9% of men, and affect more women than men across all ages (Davidson, Neale, Blankstein, & Flett, 2005).

Generalized Anxiety Disorder and Phobia Disorders are the most commonly diagnosed anxiety disorders (Ayers, Sorrell, Thorp & Wetherell, 2007); therefore, these were the two anxiety disorders discussed in this study. According to the DSM-IV, Generalized Anxiety Disorder is described as constant, excessive worry and anxiety, directed towards multiple situations and occurs for a minimum of six months. Phobia Disorders can be broken into two different categories, Specific and Social Phobias. Specific Phobia is described as a considerable degree of anxiety experienced when exposed to a specific objects or situations, which frequently results in avoidant behaviour. Social phobia is described as a considerable degree of anxiety experienced when exposed to certain social or performance situations, which frequently results in avoidant behaviour (American Psychiatric Association, 2000).

According to Edmund Bournes (2005), there are three different types of anxiety that an individual can experience: spontaneous panic attack, situational anxiety, and anticipatory anxiety. Spontaneous anxiety is described as anxiety that occurs “out of the blue” and is not connected to a particular situation. Situational anxiety is described as unrealistic anxiety that is connected to a particular situation, for example, being anxious about driving on highways or going to see the doctor. Anticipatory anxiety is described as anxiety that builds up when an individual is continuously thinking about a particular anxious situation. Individuals not diagnosed with anxiety disorders still have the ability to experience these types of anxiety.

Anxiety can be operationally defined using Lang’s three-response system model. This model states that anxiety affects an individual’s physiological, behavioural, and verbal response systems (Craske & Tsao, 1999). The physiological response system includes bodily reactions, such as rapid heartbeat, muscle tension, wobbly legs, shaky hands, and sweating. The behavioural response system includes the way individuals act, express themselves, and deal with situations, for example, an individual may avoid or escape an anxious situation. The verbal response system includes what individuals say to themselves or others about the anxious situation, for example, “What if I don’t get the job? My family is going to think that I am a fool”. Anxiety can occur at varies intensity levels and affects an individual’s entire being (Bournes, 2005). Overall, anxiety seems to be a chronic problem among many individuals and study such as this one would facilitate treatment plans to help individuals manage and cope with anxiety.
**Treatment for Anxiety**

Anxiety is believed to be caused by a combination of biological and personal circumstances (Bournes, 2005). The biological component relates to the genetic traits that an individual inherits from their family and the personal circumstance component relates to the events that occur within an individual’s life (divorce, losing a job etc.). Medication can be used to help manage the biological component of anxiety and cognitive-behavioural therapy can be used to help manage the personal circumstance component of anxiety, therefore, making these the two most popular treatments for anxiety (McDermott, 2004). There are some sources that claim cognitive-behavioural therapy to be the more favourable treatment choice when treating individuals with anxiety disorders (Westra, Dozois, Marcus, 2007), and was the chosen treatment for this study.

Over the past two decades many researchers have used the methods of cognitive-behavioural therapy to treat individuals with anxiety disorder and have found it to be successful at creating change in individuals’ dysfunctional thoughts (Mobini & Grant, 2007). Cognitive-behavioural therapy was described as a process that attempts to alter the way an individual feels and thinks (Zauta, Davis, Reich, Nicassario, Tennen, Finan, et al., 2008). Behaviours and feelings are believed to be influenced by thoughts; therefore, by changing an individual’s thought process it would likely produce positive effects on their behaviours and feelings (Randall & Finkelstein, 2007). Cognitive-behavioural therapy incorporates a variety of different techniques, such as relaxation, in vivo exposure, imagery exposure, panic management, breathing retraining, and cognitive restructuring (Randall & Finkelstein, 2007). In addition, the positive effects gained by cognitive-behavioural therapy have been shown to continue once the individual leaves treatment (Perugi, Frare, Toni, 2007). There is evidence suggesting that cognitive-behavioural therapy would be effective in psychiatric rehabilitation, as it reduces anxiety symptoms and improves quality of life (Randall & Finkelstein, 2007), therefore, it was choose to be included in this study.

Today in Canada over 14.4 billion dollars are spent on direct and indirect services for individuals diagnosed with mental health disorders (Myhr & Payne, 2006). As well, mental illnesses account for 50% of hospitalizations and physician billings. According to Myhr & Payne (2005), the rise in cost is believed to be due to pharmacological treatments being the first choice of treatment, and because of thus there has been a growing interest in non-pharmacological treatments, such as cognitive-behavioural therapy because it is cost-effective. Cognitive-behavioural therapy has many advantages over pharmacological treatment including: fewer dropouts and relapse, higher satisfaction, less side effects, and is time-limited. In addition, cognitive-behavioural therapy as a sole treatment has been shown to be just as effective as medication when treating anxiety. According to Myhr & Payne (2005), cognitive-behavioural therapy is at least a 1.5 to 2-fold increase in cost-effectiveness.

Labrecque, Marachand, Dugas, & Letarte (2007) studied the use of cognitive-behavioural therapy with three participants diagnosed with Panic Attacks along with Agoraphobia and Generalized Anxiety Disorder. The authors found that cognitive-behavioural therapy was effective in managing the individuals’ anxiety and the positive gains continued to be present at a one year follow up (Labrecque, Marachand, Dugas, & Letarte, 2007). Cognitive-behavioural therapy can be used with a variety of different populations. Williams, Foo, & Haarhoff (2006),
found that cognitive-behavioural therapy was effective in educating a Chinese woman with Generalized Anxiety Disorder about her problems, provided her with coping techniques to reduce her anxiety, and gave her a sense of self-efficacy, thus allowing her to feel in control of her constant anxious thoughts. Not only has cognitive-behavioural therapy been shown to produce positive effects among adults, it has also been effective among children diagnosed with anxiety disorders (Gosch, Flannery-Schroeder, Mauro, Comptom, 2006). In addition, individuals that received cognitive-behavioural therapy were shown to have greater improvements in managing their anxiety when compared to individuals on a waiting list (Dugas, Ladoueur, Leger, Freeston, Langolis, Provencher, et al., 2003). Thus, confirming that cognitive-behavioural therapy is an effective treatment in decrease anxiety. Cognitive-behavioural therapy was the choice of treatment used within this study, as it was hypothesized to achieve similar effects among individuals diagnosed with mental health disorder who experience anxiety.

**Progressive Muscle Relaxation and Anxiety**

Progressive muscle relaxation was first found by Edmund Jacobson in 1934 when he discovered that individuals could tense, and then release various muscle groups to experience a sense of relaxation (McCallie, Blum & Hood, 2006). Edmund Jacobson believed that progressive muscle relaxation would work well for individuals who experience anxiety because “an anxious mind cannot exist in a relaxed body” (McCallie, Blum, & Hood, 2006, p. 2). What he meant by this was that if an individual could relax, than they would be less likely to experience anxious thoughts. Progressive muscle relaxation has been shown to be an effective technique at reducing anxiety and is the most widely used method today (McCallie, Blum, & Hood, 2006).

Ghonchen and Smith (2004) formed a study with 40 randomly selected adults. Half were assigned to a progressive muscle relaxation group and the other half were assigned to a yoga stretching group. Each group met for five consecutive weeks and practiced their assigned technique once a week. Participants were required to complete the Smith Relaxation States Inventory before and after each session. After comparing the two groups’ inventories, it was discovered that the participants in the progressive muscle relaxation group showed improved results on the Smith Relaxation States Inventory. In addition, the participants in the progressive muscle relaxation group also showed greater improvements in physical relaxation, disengagement, joy, and mental quiet. Thus, suggesting that progressive muscle relaxation would be a reliable technique to help individuals relax.

Another study incorporated the use of progressive muscle relaxation with 30 participants diagnosed with Generalized Anxiety Disorder (Borkovec, Mathews, Chambers, Ebrahimi, Lylte, & Nelson, 1987). Sixteen of the participants received cognitive therapy\(^1\) and progressive muscle relaxation and 14 received non-directive\(^2\) therapy and progressive muscle relaxation.

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1\(^{\text{Provides insight into how thoughts and images influence the expression of emotions. Therapy involves identifying thoughts, analyzing thoughts, identifying alternative thoughts, and using the alternative thoughts. Homework includes relaxation, applying coping techniques to real life situations, and testing new beliefs through behavioural experimentation.}}\)

2\(^{\text{Provides individuals with the opportunity to discuss their thoughts and feelings. This therapy does not provide alternative thinking or analyzing thoughts and feelings. Therapy involves clarifying thoughts and feelings, no advice or suggestions are given. Homework includes recoding emotional experiences to help facilitate discussion for next session.}}\)
Participants were required to complete rating scales, questionnaires, and daily self-monitoring sheets to assist in recording data about the effectiveness of the treatments. From the data collected, it was shown that the group as a whole had a reduction in anxiety; however the cognitive behavioural therapy and progressive muscle relaxation group showed the greatest improvements. The results support the notion that progressive muscle relaxation is an effective technique to help individuals reduce their anxiety.

An additional study was carried out with colorectal cancer patients to evaluate the effects of progressive muscle relaxation on anxiety and quality of life (Cheung, Molassiotis, & Chang, 2003). One group received training on progressive muscle relaxation and a control group received routine care. To evaluate the effectiveness of progressive muscle relaxation and routine care the State-Trait Anxiety Inventory and two Quality of Life Scales were used. After ten weeks of data collection the progressive muscle relaxation group showed significant reductions on the State-Trait Anxiety Inventory and increased scores on the two Quality of Life Scales.

These studies support the use of progressive muscle relaxation to decrease participant’s anxiety and increase their quality of life through increased activity engagement, therefore was a chosen technique to use in this study. All of the studies above, except for one, only measured one variable to determine the effectiveness of progressive muscle relaxation. However, this study will measure if progressive muscle relaxation reduces anxiety levels, as well as will measure if reduced anxiety levels allow individuals to increase their activity engagement.

**Thought Stopping and Anxiety**

Thought stopping consists of having an individual think about an anxiety provoking situation or idea, and then when the individual subsequently states the irrational thought, the therapist and/or individual shouts the word “stop” (Wilde, 2008). Thought stopping procedures are used as a means of inhibiting the individual’s irrational thoughts. The ultimate goal of thought stopping is to have the individual think of an anxiety provoking situation or thought, independently stop the thought themselves, and replace the irrational thought with a pre-selected rational thought.

Johnson, Gilmore, & Shenoy (1983) applied the concepts of thought stopping with a 30 year-old male who experienced hallucinations and obsessional ruminations. The therapist conducted five sessions with the participant to teach thought stopping, and then the participant was instructed to practice the technique at least three times a day outside of the therapy session. After one month of practicing, the participant reported that he noticed a reduction in both hallucinations and obsessional thoughts. In addition, the participant also reported that his disturbing thoughts were not eliminated completely, but he felt more in control of his thoughts, therefore, felt less anxious when an irrational thought occurred.

Another study used thought stopping with a 30 year-old male who experienced obsessive thoughts about killing children (Gangdev, 1992). This intervention involved having the participant think of an obsessive thought, and then replacing that thought with a rational cognitive response. Once the participant was able to identify a rational cognitive response, he rehearsed that thought until the irrational thought was eliminated. From the data collected it was
shown that thought stopping combined with the rehearsals was effective in decreasing the participant’s obsessive thoughts. These gains were maintained at two and five week follow-ups.

Thought stopping not only has been effective with adults, but it has also been demonstrated to be effective among school-aged children who experience anxiety (Ross, 1984). The children wrote out positive statements about a feared event or object, and then recited positive statements when the fears event or object came to mind. After a few weeks of reciting the positive statements, the children reported a reduction in their anxiety while thinking about the feared event or object. In addition, thought stopping has been used with a variety of different population, including short-term, acute care, and chronically ill individuals, and has been shown to be effective in reducing anticipatory anxiety about painful situations (Ross, 1984).

Much of the thought stopping articles reviewed that included adult participants were single case studies. There was little research found on the use of thought stopping with multiple participants, therefore, influencing the choice of using thought stopping in this study as there were three participants. In addition, involving multiple participants would likely provide more reliable results compared to single case studies. Thought stopping was integrated into this study, in hopes of achieving similar results as described in the above studies when applied to participants diagnosed with mental health disorders who experience anxiety. Desirable results would consist of the participants independently stopping their irrational thoughts, replacing irrational thoughts with rational thoughts, and reporting lowered anxiety levels.

**Activity Schedules**

The use of activity schedules has produced an increase in activity engagement among a variety of populations. Such populations include children and adults with autism, children with mild mental retardation, and children with disruptive behaviours (Watanabe & Sturmey, 2003; Lalli et al., 1994; MacDuff, Krantz, & McClannahan, 1993). As well, activity schedules that include pleasant activities have been used as a coping technique with adults who experience depression and were shown to be effective (Zeiss, Lewinsohn, & Munoz, 1979; Lewinsohn & Libet, 1972). However, the literature does not show whether activity scheduling that incorporates times for coping techniques would be effective in reducing anxiety and increasing activity engagement.

Watanabe and Sturmey (2003) confirmed that activity scheduling with the purpose of decision making was effective in increasing on task behaviour among adults with autism. The authors found that activity schedules allow individuals the opportunity to make choices, thus increasing the likelihood of engagement. Activity schedules should facilitate individuals experiencing anxiety in making decisions about when they will utilize their coping techniques, therefore increasing the probability of engagement.

Activity schedules also increased the maintenance and generalization of complex response chains in children with autism, as they learned how to complete home-living and recreational tasks (MacDuff et al., 1993). Activity schedules provided mildly disabled children with predictable routines and a means to achieve reinforcement, which increased their motivation to engage in activities (Lalli et al., 1994). If individuals with anxiety were to incorporate times to use coping techniques with an activity schedule, then it is likely to foster a personal routine.
which will make the behaviour performance more natural. “Activity schedules have been demonstrated to be effective in increasing independent behaviour of people with disability” (Watanabe & Sturmey, 2004, p. 535). This study is hoping for a similar effect when used with individuals that experience anxiety.

After, reviewing the literature on activity schedules it was shown that they can produce desirable behaviours among a variety of populations. However, there was no evidence found that activity schedules had be used with individuals that experience anxiety, so including activity schedules in this study was chosen to determine if positive effects could be achieved.

Research has demonstrated that individuals who focus their attention on negative thoughts tend to negatively affect their mood and self esteem (Borton, 2002). If individuals that experience anxiety created an activity schedule that incorporates the rehearsal of coping techniques, then it would be hypothesized that there would be fewer negative thoughts and more positive thoughts evoked by the coping techniques, which will reduce participants’ anxiety and allow them to engage in everyday living activities.

**Beck Anxiety Inventory**

The Beck Anxiety Inventory is a 21 item, self-report assessment, which rates an individual’s anxiety on a four point scale (Osman, Hoffman, Barrios, Koper, Brictonstein, & Hahn, 2002). This assessment measures both cognitive and physiological symptoms of anxiety (Hewitt & Norton, 1993). Beck and his colleagues tested the scale on 83 adult psychiatric outpatients diagnosed with anxiety related disorders, and found that the scale had high internal consistency (.92) and high 1 week test-retest reliability (.75) (Osman et al., 2002).

Wetherell & Arean (1997) also tested the effectiveness of the Beck Anxiety Inventory with older medical patients aged 55-92. The study contained 71 women and 125 men and all participants had low incomes and the average education completion was grade 12. The Beck Anxiety Inventory was shown to have high internal consistency. As well, it was found to be a valid anxiety assessment measure to use with diverse populations, as there were no significant differences between sex and race. Due to this study, the Beck Anxiety Inventory was chosen for this study to measure anxiety levels, as the participants all had low incomes. In addition, two out of the three participants in this study were seven to eight years younger than the participants in the above study; however, the Beck Anxiety Inventory continued to be chosen for this study because it would likely produce valid and reliable results and would contribute to vast amount of research regarding the inventory’s effectiveness with this population.

Self-reporting assessments such as the Beck Anxiety Inventory are quick and cost effective (Heithoff & Wiseman, 1996), however self-reports have some limitations. Self-report assessment may not always produce reliable and valid results because participants are required to relay on their memory and they may easily forgot important information (Rabbitt & Abson, 1999). In addition, some psychological functioning is believed to be unconscious so participants maybe unaware of their symptoms when reporting anxiety levels (Krueger & Kling, 2000). Despite the limitations the Beck Anxiety Inventory was still used in this study as the author did not see participants daily, therefore was unable to complete direct observations.

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3 White/European Americans, Black/African American, Asian American/Pacific Islanders, and Hispanic/Latino
Positive Reinforcement

Positive reinforcement is described as a process of identifying and encouraging desirable behaviours, in hopes that the behaviour will continue (Sigler & Aamidor, 2005). Positive reinforcement was used with a young girl who experienced separation anxiety from her mother while at school (Gosschalle, 2004). Both the teacher and mother provided positive reinforcement, fast food and extra computer time, to the participant for attending school and not calling for her mother. After five weeks of treatment the participant attending school full time and was not calling for her mother while at school. In addition, these results were maintained at a four and 12 month follow-up. Stormont, Smith, & Lewis (2007) also demonstrated that positive reinforcement was effective in decreasing problem behaviours among school-aged children. Their study involved three teachers used precorrections and praise with students in their classrooms. Praise involved positive, verbal statements for engaging in appropriate social and academic behaviours. Precorrections involved verbal statements that identified for the students the appropriate behaviour that was expected. The results indicated that forms of positive reinforcement were effective; all three teachers reported a decrease in verbal reprimands and problem behaviours. In addition, a review of positive reinforcement supported that positive reinforcement can shape new behaviours (Catania, 2001); therefore, it was likely to shape the new behaviours of increased use of coping techniques, decreased anxiety levels, and increased activity engagements. Positive reinforcement was included in this study to identify to the participants the acceptable and appropriate use of coping techniques and activity schedules.

Self-Monitoring

Self-monitoring can make individuals aware of their behaviour and give them the ability to learn about the functioning of their behaviours, thus allowing the individuals to generate a new response for the future (Beitman & Soth, 2006). Self-monitoring has been used with a variety of populations within different settings (Cho, 2007). Baker & Kirchenbaum (1998) used self-monitoring with obese women and it made them more aware of their daily food intake, which helped them to lose weight. As well, self-monitoring was used with three elementary students who were in a special education classroom and was effective at creating a new response among the participants, as on-task behaviour was increased (Amato-Zech, Hoff, & Doepke, 2006).

Research has also shown that self-monitoring decreases an individual’s dependence on external agents for behaviour change, thus facilitating maintenance and generalization beyond the training environment (Amato-Zech, Hoff, & Doepke, 2006). This means that an individual will take their new learned behaviour and apply it in real life situations. Self-monitoring was used in this study because it would allow each participant the opportunity to become aware of their behaviour and increasing the likelihood of independence.

From the above literature self-monitoring seems to be highly effective, however, Kanfer (1970), noted that there are some limitations to self-monitoring. When participants record their own data there is concern if the data is accurate as there is no external agent to confirm or dismiss the recorded results (Kanfer, 1970). In addition, participants are likely to know the desirable results and may skew their results in order to achieve the hoped for outcomes (Kanfer, 1970). Moreover, self-monitoring is an effective method to use because it has been shown to help individuals manage their stress (Huflejt-Lukasik & Czarnota-Bojarska, 2006). Self-
monitoring makes individuals turn in to their surrounding environment, which allows them to pick up on social cue in the environment, thus changing their behaviours based on the cues.

**Activity Engagement and Mental Health**

The lives of individuals diagnosed with mental health disorders have been reported to consist of daily isolation and meaningless (non-challenging) activities, such as watching TV (McCormick, Funderburk, Lee, & Hale-Fought, 2005). This is believed to be true because individuals with mental health disorders tend not to engage in meaningful (challenging) activities due to severe anxiety. Individuals suffering from anxiety typically have low mood states as they are constantly feeling fearful and scared towards their anxious thoughts and situations. Mood state has been shown to greatly affect an individual’s functioning. When their mood state was high, individuals were more likely to engage in meaningful activities, as compared to when their mood state was low. It has been reported that individuals with mental illnesses spend 71% of their time at home, 37% of their time alone, and 10% of their time doing nothing. This shows the importance of creating a program for individuals diagnosed with mental health disorders designed to decrease their anxiety levels and increase their meaningful activity engagements.

**Context for the Current Study**

The literature review identified a need for research to focus on ways to decrease anxiety and increase activity engagement among individuals diagnosed with mental health disorders. From the literature it was evident that much research has been conducted on the use of cognitive-behavioural therapy coping techniques such as, progressive muscle relaxation and thought stopping, to reduce anxiety. However, not found in the literature was a way to prompt the continued use of coping techniques outside the therapy sessions.

After reviewing the literature on activity schedules, it was hypothesized that the use of activity schedules could prompt the continued use of coping techniques, therefore, likely to cause a decrease in anxiety levels and increase activity engagements. Activity schedules have been effective in increase activity engagement among a variety of populations. These effects could be because activity schedules provide choice; therefore increasing the likelihood that they would follow their schedule. As well, activity schedules have been shown to produce independent behaviours; therefore, influencing the use of activity schedules in this thesis seemed reasonable, as it was likely to produce positive effects among the participants involved.

Furthermore, it has been shown that self-monitoring and positive reinforcement can increase the likelihood of developing and continuing desirable behaviours. Self-monitoring made individuals aware of their behaviour and positive reinforcement made individuals aware of effective and appropriate behaviours. Combining activity schedules with the use of self-monitoring and positive reinforcement was a logical method to implement because each technique has been shown to generate valuable outcomes.

In conclusion, the function of this thesis was to use activity schedules to increase the use of anxiety coping techniques. This should decrease anxiety levels and increase activity engagements among independent living adults diagnosed with mental health disorders, who experience anxiety. This study is important for the success and quality of life of the participants because anxiety would be less likely to interfere with their ability to function. Activity schedules
are a reasonable logical method to use for increasing the use of coping techniques because they provide structure, choice, reinforcement, independence, and predictable routines. If activity schedules yield positive effects, then participants’ anxiety levels should be lowered, this would likely lead to less dependence on case management worker.
Chapter III: Method

Participants
Martha, Amy, and Kelly\textsuperscript{4}, adult clients of a community mental health agency, were referred by their case management worker to a Behavioural Psychology student because of their excessive anxiety levels and low levels of activity engagement. These behaviours were believed to be interfering with the participants’ ability to reach their full potential in life. If these individuals could utilize coping techniques to reduce their anxiety, then they would likely engage in more activities, thus increasing their quality of life. All participants had an average daily anxiety level of 15 or higher on the Beck Anxiety Inventory and an average daily activity engagement level of seven or less. The target behaviours selected for this study were decreased anxiety level and increased activity engagement. Participants were eager and willing to explore coping techniques to help reduce their anxiety in hopes of increasing their activity engagements.

Background on the Participants
Martha is a 60 year old woman, diagnosed with Major Depression and Dependent Personality Disorder, and she currently lives alone. Martha has received her grade 12 diploma and has completed some college courses. She is presently unemployed, but has held many jobs in the past. Martha has been experiencing chronic anxiety for about five years and was hospitalized once because of excessive anxiety. She has never received professional assistance to help manage her anxiety, but is currently on medication that is moderately effective in controlling her anxiety. Martha is hopeful, and believed that eventually she would be able to control her anxiety instead of her anxiety controlling her. If her anxiety were to decrease, then Martha would likely engage in more daily activities such as knitting, painting, and shopping.

Amy is a 47 year-old women, diagnosed with Generalized Anxiety Disorder, who is currently living with her husband of 15 years. Amy has received a post secondary diploma in Social Service Worker. After completing her diploma Amy worked in the field, but she is currently unemployed. Amy has been experiencing chronic anxiety for about ten years. She is grateful that she has never been hospitalized due to anxiety and believes this is because she is currently on effective medication. Amy has received professional assistance in managing her anxiety from her case management worker and doctor. The assistance has helped Amy to some extent control her anxiety; however, she was willing to explore different treatment options to decrease her anxiety and increase her enjoyment in shopping in such stores as wal-mart and the mall.

Kelly is a 48 year-old women, diagnosed with Generalized Anxiety Disorder, Social Anxiety, and Panic Attacks with agoraphobia, and is currently living with her youngest son. Kelly’s has completed grade 11. After leaving high school Kelly had many jobs, but stopped working when she started having children. Kelly has been experiencing chronic anxiety for about six years. Kelly has never been hospitalized due to her anxiety; however, she has taken herself to the hospital three to four times because of anxiety produced heart attack symptoms. At this time, Kelly’s anxiety is somewhat being controlled by medication and the assistance she receives from her case management worker. In addition, she has worked with a former placement student and achieved moderate success in managing her anxiety. Kelly was eager to

\textsuperscript{4} Fictional names
try different coping techniques to reduce her anxiety, so she can engage in walks down by the water and gain employment.

**Research Design**

This study consisted of three case studies and used an AB design; A was the baseline phase and B was the treatment phase. The independent variables were activity schedule, progressive muscle relaxation, and thought stopping. The dependent variables were decreased anxiety level and increased activity engagement. Decreased anxiety level was said to occur when the client’s daily self reported anxiety level, using the Beck Anxiety Inventory, was at least two points lower than the average level collected during baseline. Increased activity engagement was said to occur when the client’s weekly average activity engagement was increased by at least one additional activity than the average number of activity engagements collected during baseline. Also, to be considered increased activity engagement, the client must be alert and occupied with an object or an individual for at least ten minutes. Examples of activity engagement include going outside of the house, talking on the phone, visiting with a friend or family member, cleaning the house, watching TV. Increased activity engagement does not include daily personal activities such as eating, making meals, bathing, smoking and getting dressed. If an individual engaged in the same activity more than once a day, it was only counted as one activity engagement. Decreased anxiety level was assessed by the participants completing a Beck Anxiety Inventory daily. Increased activity engagement was assessed by the participants describing and recording their frequency of daily activity(ies) in the corresponding time period on the activity schedule. Visual analysis was conducted to interpret the baseline and treatment data.

For each of the dependent variables there were goals and objectives established. The goal for decreased anxiety level consisted of reducing daily anxiety levels by at least 11 points on the Beck Anxiety Inventory, for three consecutive days, when compared to the average anxiety level collected during baseline. There were seven objectives created for this target, one for each week of treatment to help the participants reach the above goal. The objectives were to decrease daily anxiety level by 2, 4, 6, 8, 9, 10, and 11 points on the Beck Anxiety Inventory, each for three consecutive days. The goal for increased activity engagement consisted of increasing weekly average activity engagement by seven activities, for three consecutive days, when compared to the average activity engagement level collected during baseline. There were also seven objectives created for this target, one for each week of treatment, to help participants reach the above goal. The objectives were to increase activity engagement by 1, 2, 3, 4, 5, 6, and 7 additional activities, each for three consecutive days. The hours of data collection occurred Monday–Sunday from 7:00 a.m.-12:00 p.m., beginning on October 13 and ended on November 30, 2008.

**Materials**

The materials used in this study included: a data collection package, relaxation CD, CD player, a coping technique package, q-cards, writing utensil, and an elastic band or squeeze ball. All materials were provided by the author, but not the CD player, which all participants owned. The data collection package was given out once a week and contained an activity schedule (Appendix A) and seven Beck Anxiety Inventories (Appendix B). This package was used by the participants to self record their daily anxiety levels and daily activity engagements. The Randy
Paterson (2004) Changeways Clinic CD was provided to each participant. The CD was used to practice progressive muscle relaxation and the coping technique package was used to practice thought stopping. The coping technique package (Appendix C) contained information and guidelines for practicing progressive muscle relaxation and thought stopping. Both the data collection package and coping technique package was created in Microsoft Word. Positive statements were written on q-cards and participants used their positive statement q-cards when they were practicing thought stopping. In addition, depending on the participant’s personal preference, an elastic band or squeeze ball was used to help disrupt the participants’ negative thoughts while practicing thought stopping. Finally, a writing utensil was necessary to complete the data collection package, and it was required when practicing thought stopping to write out negative thoughts and positive statements.

Setting
The study was conducted in the participant’s home and at the author’s office. The first few meetings were held at the participant’s home because the author was teaching the participants progressive muscle relaxation and thought stopping. Participants were comfortable within their homes, therefore techniques would likely be more pleasurable, produce greater results, be learned quickly, and distractions would be limited. In addition, participants would likely benefit from learning and practicing coping techniques in their homes, as the environment could have a conditioning effect on them to engage in the particular behaviour of utilizing coping techniques. Meetings at the participant’s home were conducted in the living room as this was most comfortable for the author and participants. About half way through the treatment phase, the participants were asked to occasionally meet at the office as this would help with generalization. While at the office the author and participant met in a room that included a table, chairs, two file cabinets, and a white board. Most meetings consisted of the author and the client alone, however, occasionally one participant’s husband was present while practicing thought stopping, as he provided suggestions and insight into the participant’s negative thoughts and positive statements.

Ethical Approval and Informed Consent
This study involved three human participants; therefore, ethical approval was required prior to implementation. To gain approval a research proposal was created and presented to the St. Lawrence College Research and Ethical Committee for Psychology. Once the approval was granted, the participants were approached for consent.

Face to face meetings at the participant’s home were set up with the intent to share informed consent forms used in the Behavioural Psychology Program, by fourth year students working with adults & doing thesis (Appendix D). The informed consent pages consisted of information the participants about the author, the focus of the study, and the benefits and risks of participation in the study. The participants were informed that the study was created in collaboration with two supervisors, one for the agency and one from the college, and had been approved by both the agency and the St. Lawrence College’s ethics board. In addition, participants were informed about their roles and responsibilities as well as the limits of confidentiality. Furthermore, questions and concerns were addressed. After reviewing the informed consent pages, the participants signed the forms, returned them to the author during the
meeting, and the author provided the original copy to each participant’s case management worker to be filed in the participant’s files.

**Selection of Invention**

To improve the lives of the participants, a combination intervention was created that consisted of coping techniques (progressive muscle relaxation and thought stopping) and activity schedules. The aim of the coping techniques was to decrease anxiety and provide the participants with tools to help manage their anxiety. The aim of the activity schedules was to prompt participants to practice their coping techniques and to increase activity engagement. Two out of three participants had used coping techniques prior to treatment and found them to be effective. The other participant had never been educated nor used coping techniques prior to treatment. Therefore, the focus of the study was behavioural, based on prompting continued use of coping techniques to decrease anxiety, which would likely increase activity engagement.

**Measures**

Prior to implementation of this study functional and baseline assessments were completed. The functional assessments consisted of reviewing the participants’ case files and conducted an interview with each participant. The baseline assessments consisted of two weeks of data collection. After reviewing the functional and baseline assessments, the intervention procedures were chosen. The results obtained from these assessments are presented in the results section, which follows.

*Review of Each Participant’s Case File:*

The case files were reviewed to gather background information as well as to determine if the participants were eligible for the study.

*Interview with Each Participant:*

The author created the interview (Appendix E) that was used with each participant to gather information about their anxiety and to add to the background information already obtained. The interview consisted of a variety of questions about the participant’s past and present anxiety and personal circumstances. The interview was conducted in a face to face meeting at the participants’ homes and the author and the participants were the only ones present. In addition, the interview was a straightforward method for gathering information on the participants and helped to build a therapeutic rapport between the participants and the author.

*Baseline Recording of Daily Anxiety Levels Using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993) for Each Participant:*

Participants recorded their daily anxiety levels pertaining to inside and outside of the home, Monday to Sunday from 7 a.m. to 12 p.m. At the end of the day participants would reflect back on the course of their day, and then would complete a Beck Anxiety Inventory (Appendix B) rating the severity of their anxiety symptom on a scale of 0-3, with 0 meaning *not at all* and 3 meaning *severely bothered me a lot*. The instructions for completing the Beck Anxiety Inventory were provided at the top of the inventory. However, there was an except to the instructions, for the purpose of this study the Beck Anxiety Inventory was modified as participants were told to score their anxiety symptoms based on that particular day only and not
regarding the month. The data collected was used to make sure the participants were 
experiencing anxiety and to determine if there was a pattern in their anxiety levels.

*Baseline Recording of Frequency of Daily Activity Engagement for Each Participant:*

Participants recorded their daily activity engagements completed both inside and outside 
of the home, Monday to Sunday from 7 a.m. to 12 p.m. Each participant was provided with an 
activity schedule (Appendix A) that contained the days of the week and hours of data collection. 
The participants were instructed to record and describe in the corresponding time periods what 
activities they completed. Boxes that were left blank on the activity schedule were interoperated 
as the participant not engaging in an activity. Activities included appointments, chores, and 
leisure activities. The data collected was used to make sure the participants had low levels of 
activity engagement and to discover if there was a pattern in their activity engagement.

For each baseline assessment, the average was calculated and the obtained score was 
compared to treatment, which would determine the effectiveness of the study on each 
participant’s anxiety and activity engagement. The functional and baseline assessment measures 
used in this study did not require much time and they were easily completed with minimal skill 
required, therefore, were the chosen for this study. Treatment assessments remained the same as 
baseline assessments; however, the participants’ activity schedule was filled a week in advance 
during the treatment phase, thus leaving participants to record whether they followed the activity 
schedule. If they did not follow the activity schedule, then they were required to record what 
they did instead and, if they did follow the schedule, then they checked off the completed 
activities.

*Baseline Data*

Baseline data for each participant regarding their anxiety level and activity engagement 
was collected for two weeks prior to the implementation of the treatment. From the data it was 
shown that all participants had high anxiety levels and low levels of activity engagement. The 
data collected during baseline showed that all participants had high anxiety levels and low levels 
or activity engagement.

*Procedures*

*Training on the Intervention for Both Staff and Participants*

Separate meetings were scheduled to explain the intervention to each client and their case 
management worker. This training occurred for a week and the author meant twice with each 
participant and their case management worker. During the meeting the author reviewed all 
intervention procedures that were explained included: data collection, coping techniques, 
reinforcement, activity schedule, and Beck Anxiety Inventory were reviewed. The author 
provided a number of examples while explaining the above procedures, and took time to answer 
participant and case management worker questions. The author set up weekly meetings and 
made phone calls to each participant every other day to check in on their progress with the above 
procedures. During each meeting and phone call the author would again briefly review the 
treatment procedures and would provide examples to ensure that procedures were being 
followed accurately. In addition, the author and participant discussed tips to facilitate 
engagement in the intervention procedures. Tips included placing the data collection sheet in a 
visible area where the participant looked each day. To assist in the participant’s motivation
towards the program, the author and/or case management worker provided verbal positive reinforcement for following the intervention procedures.

Training on the Coping Techniques for participants

Prior to implementation of the intervention the author set up meetings with each participant separately to teach progressive muscle relaxation and thought stopping. These two coping techniques were used because they have been shown to be effective among adult participants in decreasing anxiety (Borkovec, Mathews, Chambers, Ebrahimi, Lylte & Nelson, 1987; Ross, 1984). The training on the two coping techniques was done on separate days to ensure participants were not being overwhelmed. The teaching occurred for a week, as the author met with each participant twice, once to teach progressive muscle relaxation and once to teach thought stopping. Each participant was provided with a coping technique package (Appendix C) that explained the proper usage guidelines for both techniques. As well, the coping technique package allowed participants to refer to what occurred during the training sessions. The Randy Paterson (2004) Changeways Clinic CD was provided to each client. The participants were instructed to use the CD to practice progressive muscle relaxation and to use the coping technique package to practice thought stopping. Immediately after training sessions the participant was asked to complete the Beck Anxiety Inventory to record whether the coping technique was effective in decreasing anxiety levels. For the coping technique to have a significant effect the participants had to achieve an anxiety level five points lower than the weekly average anxiety level collected during baseline. Once the techniques were taught and demonstrated to be effective, the author set up weekly phone calls and twice a week meetings with participants to review the two coping technique and to discuss the data collected. At each meeting the author reviewed one coping techniques, making sure to review the other coping technique during the next meeting. In addition, the author provided positive reinforcement to participants for using the coping techniques correctly. Furthermore, tips on how to use the coping techniques were discussed. Tips included keeping an open and positive attitude and reviewing each coping technique at least once a day.

Activity Schedule

After baseline data was collected the author collaborated weekly, face to face, with participants to fill out an activity schedule. Activity schedules were used to prompt participants to continue utilizing coping techniques beyond the meetings with the author. Activity schedules would likely achieve the above desirable effect because they have been shown to facilitate maintenance and generalization of complex responses (MacDuff et al., 1993). The activity schedule contained the days of the week, hours of the day from 7am to 12pm, total number of daily activities, and daily anxiety level (Appendix A). Participants’ activity schedules incorporated times to practice coping techniques, as well as leisure activities, daily living activities, and appointments. Each activity listed above was described in the activity schedule. During the creation of activity schedules the author would make suggestions about possible activities, but the participants ultimately made the choice about what activities were planned in the activity schedules. The participants wrote out the activity schedule to help encourage ownership and to ensure they felt no one was telling them what and when to do certain activities. The author suggested to participants to keep their activity schedule in a place they looked daily, such as on the fridge, to help prompt them to follow their schedule. In addition, participants scheduled a “special outing” at the end of the week to be carried out if they were able to achieve
their weekly objective. The “special event” was something that the participant wanted to do, such as go for coffee, buy themselves something.

**Positive Reinforcement**

The ability to self reinforce developed during and upon completion of the coping technique and activity engagement. Coping technique reinforcement consisted of having lowered anxiety levels and activity engagement reinforcement came from being able to do an activity that was pleasurable. The author provided verbal positive reinforcement during meetings and phone calls to participants for properly using coping techniques and for following their activity schedule. Also, when participants followed their activity schedule and engaged in a scheduled activity they placed a check mark beside the activity indicating completion. Thus, the check marks may have acted as a form of positive reinforcement. To reinforce the participants’ motivation, the author graphed their anxiety levels and activity engagements after three weeks of data collection, and then shared these graphs with them. The purposes of the graphs were to show the participants their progress and to help motivate them to maintain their commitment towards the program to achieve improved results. In addition, if the participants achieved their weekly objective, then the participants would engage in the scheduled “special outing”. Positive reinforcement was given to participants to encourage the use of activity schedules and coping techniques, thus making it likely that those behaviours would continue in the future (Sigler & Aamidor, 2005).

**Self-Monitoring**

Participants recorded both their baseline and intervention data. During baseline participants were given a blank activity schedule (Appendix A) and seven blank Beck Anxiety Inventories (Beck & Steer, 1993) (Appendix B) each week. The activity schedule provided the hours of data collection, days of the week, and spaces to record daily activity engagement, daily anxiety level, and total number of daily activity engagements. The author instructed the participants to record daily what activities they engaged in on the activity schedule and to complete one Beck Anxiety Inventory daily to obtain daily anxiety level. As well, if comfortable, participant added up the frequency of activity engagements daily to obtain total number of daily activity engagements. During intervention the participants continued to self monitor their anxiety level and activity engagement. The only thing different was that the activity schedule was filled in a week in advance by the participants and they were instructed to follow their activity schedule daily. If participants followed their activity schedule, then they would place a check mark on the activity schedule beside the activities they engaged daily, thus self monitoring their activity engagement behaviour. Self-monitoring was the chosen method to record data because it would make participants aware of their behaviours (Beitman & Soth, 2006). In addition, self-monitoring can decrease the participants’ dependence on external agents (Amato-Zech, Hoff, & Doepke, 2006), therefore, making participants more independent.

**Beck Anxiety Inventory (BAI; Beck & Steer, 1993)**

During both baseline and intervention participants was provided with seven blank Beck Anxiety Inventories (Beck & Steer, 1993) each week (Appendix B). The Beck Anxiety Inventory was used in this study because it was shown to produce reliable and consistent scores among adult psychiatric outpatients who experienced anxiety (Osman et al., 2002). The participants were instructed to complete one Beck Anxiety Inventory at the end of each day.
Instructions for completion were written at the top of the inventory and participants were informed to read and follow those instructions daily. To ensure proper completion of the inventory, the author reviewed the inventory instructions with participants during each face to face meeting. Some participants were not comfortable totalling their anxiety scores so it was decided that the author would add the scores during each face to face meeting.

Additional Meetings and Phone Calls
Case management workers typically saw their clients once a week; therefore, limited support and social reinforcement was available and this could have affected the participants’ motivation level. To solve this problem the author set up twice a week meetings separately with participants and made one weekly phone call. The purpose of additional contact was to help remind participants of the program and to check in on the progress of the program. The additional meetings were held at the participant’s home or at the author’s office, depending on participants’ preference. The agenda for each additional contact involved reviewing the participants’ data collection, reviewing one coping technique each contact, reviewing goals and objectives, and discussing questions or feedback about the program. Meetings and phone calls were faded out once the author felt the participants were in a routine and no longer needed the additional support. Before fading occurred, the participants must have been accurately recording data and accurately performing their coping techniques, in the option of the author.

Justification for Intervention
This study was developed because case management workers felt decreased anxiety and increased activity engagement were essential to the participants’ quality of life. The goal of case management services (the service participants are currently receiving) is to help client’s life a successful life by managing their mental health symptoms. This goal could be achieved if participants could decrease anxiety levels and increase activity engagement, as they would likely have control of their mental illness and improved lives. On the other hand, if anxiety levels were to decrease and activity engagement increase, then participants are likely going to feel in control of their body, thus having control of their life and could decrease participants’ dependence on their case management worker. In addition, after reviewing the literature it was discover that individuals diagnosed with mental health disorders who experience anxiety need assistance with managing their anxiety in order to function in their daily lives (McCormick, Funderburk, Lee, & Hale-Fought, 2005).
Chapter IV: Results

Baseline Results
Prior to the implementation of this study the author and the participants completed functional and baseline assessments. Function assessments consisted of the author reviewing each participant’s case file and conducting an interview with each participant separately. Baseline assessments consisted of the participants collecting data for two weeks on their daily anxiety level and frequency of daily activity engagements. The above assessments were used to make sure the participants were appropriate for the study.

Functional Assessment Results

Review of Each Participant’s Case File:
Martha’s, Amy’s, and Kelly’s cases file were reviewed to verify that the participants were eligible for the study and to gather background information. After reviewing the participants’ case files it was determined that they all suffered from anxiety and had low levels of activity engagement, therefore, suggesting that they should be included within this study.

Interview with Each Participant:
Martha completed the interview developed by the author of the study to facilitate gathering information about her anxiety and activity engagement, as well as add to the background information already obtained. The completed interview suggested that Martha’s anxiety was due to her perfectionism trait and unstructured time. Martha likes everything to be in order and tasks to be completed correctly. In addition, Martha has much unstructured time throughout the day, thus leaving time to think, which leads to anxiety. Her anxiety consists of her having negative thoughts about the worst things happening and her body tends to get tingly and vibrates. Martha’s onset of anxiety was believed to have occurred when she was young; however, it wasn’t until a year ago that her anxiety started interfering with her daily functioning which caused her to be hospitalized. Prior to entering into the hospital Martha lost interest in a variety of enjoyable activities, such as knitting, crocheting, and playing the piano. Around the same time Martha’s son moved out and she can recall worrying about living independently and this may have contributed to her intense anxiety. When Martha experiences anxiety she tries to distract herself by smoking, watching TV, and/or taking deep breaths. These methods are somewhat effective, however, Martha was willing to explore different techniques in hopes of gaining more control over her anxiety. Martha’s anxiety seems to occur within her apartment and occasionally within the community. Martha’s typically day consist of her sitting alone in her apartment watching TV and rarely venturing out into the community. When Martha was asked to rate her anxiety on a scale of one to ten she rated it an 11 because her anxiety has taken over her life, thus negatively affecting her ability to function. Martha’s anxiety is a chronic issue that is believed to be holding her back from engaging in enjoyable activities, thus influencing her to participate in this study.

Amy completed the interview developed by the author to facilitate gathering information about her anxiety and activity engagement, as well as add to the background information already obtained. The completed interview suggested that Amy’s anxiety was due to her constant worrying about finances. Amy constantly worries about she and her husband having enough money, and because of that Amy has lost interest in shopping, something that she use to enjoy.
Amy’s anxiety typically occurs within her apartment, as she has time to think, and when she goes shopping, because shopping requires her to spend money. Amy’s onset of anxiety was believed to have occurred when she was young because she can remember feeling anxious about how much money her mother was spending on her clothing. Amy’s typical day consists of her feeling anxious, sitting in her apartment, and going out into the community to get groceries and necessities. When Amy was asked to rate her anxiety on a scale of one to ten she rated it a ten because she is constantly feeling anxious. In addition, Amy used to engage in enjoyable activities, such as shopping at the mall and Wal-Mart, but no longer does because of excessive anxiety. Recently, Amy has begun to experience intense anxiety because she and her husband put a large amount of money on a credit card and they are now paying the money back. When Amy experiences anxiety she feels sick to her stomach and has negative thoughts about money and the future. Amy tries to control her anxiety by distracting herself through reading, going for walks, listening to music, lying down, or writing out her budget. Amy finds these techniques somewhat effective, but was eager to explore different techniques in hopes of achieving greater results and regaining enjoyment from shopping engagements.

Kelly completed the interview developed by the author to facilitate gathering information about her anxiety and activity engagement, as well as add to the background information already obtained. The completed interview suggested Kelly’s anxiety was due to her not receiving closure about her childhood. Kelly has many questions about her past but no one to ask, as her adoptive parents have passed away. Kelly has tried to ask questions of her biological father but he never provides answers as he changes the subject to himself. Kelly’s anxiety could also be due to her adoptive mother’s death, as she has never received a solid explanation for the death, thus adding to her unanswered questions. In addition, Kelly recently began to notice anxiety within other aspects of her life, such as when she is out in the community and when she visits with her family. Kelly’s anxiety seems to occur when she hears a noise or when her family is being confrontational. Kelly experiences anxiety both inside and outside of her apartment. Her anxiety consists of her having chest pains, feeling shaky, thinking about the worst things happening, and her bones and muscles ache. When Kelly experiences anxiety she tries to control it by smoking, pacing around her apartment, talking to her self, and taking deep breaths. Kelly’s onset of anxiety is believed to have occurred six years ago when she moved to Kingston and since than has progressed. When Kelly moved to Kingston she was handing out resumes an employee at a local grocery store told her that she was never going gain employment because she did not have any experience. Kelly believed that it was this particular day when her anxiety started, as she never handed out another resume and remembers confining herself in her apartment thinking negative thoughts. When Kelly was asked to rate her anxiety on a scale of one to ten she rated it a ten because anxiety controls her daily functioning and she constantly feels anxious. Kelly’s typical day involves her sitting in her apartment, taking her dog outside, and occasional visiting with family, as her father, brother, niece, and nephew live in the same building. Kelly use to be an active individual who was always out in the community, but because of her anxiety Kelly no longer enjoys going outside her apartment. Kelly was eager to participate in this study in hopes of learning techniques to control her anxiety so that she can take walks down by the water and possibly gain employment.
Baseline Assessment Results

1. Baseline Recording of Martha’s Daily Anxiety Levels Using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993)

Baseline data was collected both inside and outside of the client’s home, Monday-Sunday from 7am to 12pm (Figure 1.1). The Beck Anxiety Inventory was used to determine the client’s daily anxiety level throughout the entire day. These data suggested that Martha’s average anxiety level over the course of two weeks on the Beck Anxiety Inventory was $M=20$ (SD=8.7). In addition, these data indicated that Martha’s daily anxiety level was stable, as 80-90% of the data points fell within 15% range of the median level. Baseline data also suggested that Martha’s anxiety level was high on weekdays and lower Fridays through Sunday, thus suggesting that she may have to use coping techniques more throughout the weekdays and only occasionally on weekends. Martha’s anxiety appears to be high on days when she spends a lot of her time in her apartment with nothing planned and those days tend to occur through the week. In addition, Martha’s anxiety appears to be lower on days when she visits her family and this occurs Friday through Sunday. Refer to Appendix F for baseline data and graphs with trend lines.

![Figure 1.1: Baseline Recording of Martha’s Daily Anxiety Levels](image)

- ● – weekdays (Monday to Thursday)
- ▲ – weekends (Friday to Sunday)
Baseline Recording of Martha’s Frequency of Daily Activity Engagements

Baseline data was collected both inside and outside of the client’s home, Monday-Sunday from 7am to 12pm for two weeks. Frequency recording was used to gather the total number of daily activity engagements (Figure 1.2). These data suggested that Martha’s average number of activity engagement was $M=3.1$ (SD=.7), and mainly occurred on the weekends. Martha’s activity engagements were stable, as 80-90% of the data points fell within a 15% range of the median level. In addition, these data indicated that more activity engagements were recorded on the weekends, coinciding with Martha’s days of lowest anxiety levels. Please refer to Appendix F for baseline data and graphs with trend lines.

![Figure 1.2: Baseline Recording of Martha’s Frequency of Activity Engagements](image)

*Figure 1.2: Baseline Recording of Martha’s Frequency of Activity Engagements*
- ● – weekdays (Monday to Thursday)
- ▲ – weekends (Friday to Sunday)

Baseline Recording of Amy’s Daily Anxiety Levels Using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993)

Baseline data was collected both inside and outside of the client’s home, Monday-Sunday from 7am to 12pm for two weeks (Figure 2.1). The Beck Anxiety Inventory was used to determine the client’s daily anxiety level throughout the entire day. These data showed that Amy’s average anxiety level on the Beck Anxiety Inventory was $M=15.9$ (SD=5.6). These data indicated that Amy’s daily anxiety level was stable, as 80-90% of the data points fell within 15% range of the median level. In addition, baseline data suggested that Amy’s anxiety level was high both on weekdays and weekends, thus indicating that coping techniques need to be used throughout the entire week. Amy’s anxiety level tends to be high on shopping days and lower when she visits her family. This suggests that she may have to use coping techniques frequently.

23
on shopping days but only occasionally on days when she visits with her family. Please refer to Appendix G for baseline data and graphs with trend lines.

![Figure 2.1: Baseline Recording of Amy’s Daily Anxiety Levels](image)

**Figure 2.1: Baseline Recording of Amy’s Daily Anxiety Levels**

- ● – weekdays (Monday to Thursday)
- ▲ – weekends (Friday to Sunday)

**Baseline Recording of Amy’s Frequency of Daily Activity Engagements**

Baseline data was collected both inside and outside of the client’s home, Monday-Sunday from 7am to 12pm for two weeks. Frequency recording was used to gather the total number of daily activity engagements (Figure 2.2). These data suggested that Amy’s average number of activity engagement was M= 6.4 (SD=1.4), and occurred both on weekdays and weekends. Amy’s activity engagements were stable, as 80-90% of the data points fell within a 15% range of the median level. In addition, baseline data showed that activity engagements occurred more on days when Amy’s anxiety level was low. Please refer to Appendix G for baseline data and graphs with trend lines.
Figure 2.2: Baseline Recording of Amy’s Frequency of Activity Engagements

- weekdays (Monday to Thursday)
- weekends (Friday to Sunday)

Baseline Recording of Kelly’s Daily Anxiety Levels Using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993)

Baseline data was collected both inside and outside of the client’s home, Monday-Sunday from 7am to 12pm for two weeks (Figure 3.1). The Beck Anxiety Inventory was used to determine the client’s daily anxiety level throughout the entire day. These data suggested that Kelly’s average anxiety level on the Beck Anxiety Inventory was M=38.1 (SD=7.9). These data indicated that Kelly’s daily anxiety level was stable, as 80-90% of the data points fell within 15% range of the median level. In addition, baseline data suggested that Kelly’s anxiety level was high on weekdays and weekends, thus suggesting that she may have to use coping techniques frequently throughout the entire week. Kelly’s anxiety level tends to be high when she goes out into the community and low when she stays in her apartment. Therefore, coping techniques would be used more frequently on days when she leaves her apartment and more occasionally on days when she stays in her apartment. Please refer to Appendix H for baseline data and graphs with trend lines.
Figure 3.1: Baseline Recording of Kelly’s Daily Anxiety Levels

● – weekdays (Monday to Thursday)  ▲ – weekends (Friday to Sunday)

Baseline Recording of Kelly’s Frequency of Daily Activity Engagements

Baseline data was collected (Appendix K) both inside and outside of the client’s home, Monday-Sunday from 7am to 12pm for two weeks. Frequency recording was used to gather the total number of daily activity engagements (Figure 3.2). These data suggested that Kelly’s average number of activity engagement was $M=2.6$ (SD=.87), and occurred both on weekdays and weekends. Kelly’s activity engagements were stable, as 80-90% of the data points feel within a 15% range of the median level. In addition, these data indicated that activity engagements were higher on days when Kelly’s anxiety was low. Please refer to Appendix H for baseline data and graphs with trend lines.
Figure 3.2: Baseline Recording of Kelly’s Frequency of Activity Engagements

- weekdays (Monday to Thursday)
- weekends (Friday to Sunday)

Table 1: Recording of Daily Anxiety Levels Using the Beck Anxiety Inventory

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<th>Mean</th>
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<th>Standard Deviation</th>
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</thead>
<tbody>
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<tr>
<td>Amy Woods</td>
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<td>Kelly Jones</td>
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Table 2: Recording of Frequency of Daily Activity Engagements

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<td>Amy Woods</td>
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<tr>
<td>Kelly Jones</td>
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<td>0.87</td>
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</table>
Treatment Results

To obtain treatment results the participants continued to record their daily anxiety levels using the Beck Anxiety Inventory and activity engagements using the activity schedule.

Martha Hicks

The use of an activity schedule and coping techniques had been implemented for seven weeks and Martha completed all seven weeks of treatment. However, only five weeks and three days of treatment data collection are presented in this study as the participant forgot to bring the last week and four days of data collection to the final meeting at the office. Overall, the treatment was effective at decreasing anxiety and increasing activity engagement. Martha’s anxiety decreased 36.9% (Figure 4.1) and activity engagement increased 77.4% (Figure 4.2) since implementation of the program. It appears that Martha’s daily anxiety decreased compared to the baseline, as her average anxiety level decreased from M=20.3 (SD=8.7) to M=12.8 (SD=6.7). In addition, it appears that Martha’s daily activity engagement increased compared to the baseline as her average daily activity engagement increased from M=3.1 (SD= .7) to M=5.5 (SD=1.4). Both Martha and her case management worker were satisfied with her achievements and Martha was eager to continue implementation of the program. Martha, thus far, was able to complete objective five for anxiety level (decreased anxiety level by nine points) and objective four for activity engagement (increased activity engagement by four additional activities).

Martha’s data indicated that weekdays and weekends did not differ from one another compared to how they did in the baseline, as there were times when both weekdays and weekends had high and low anxiety and activity engagement. According to the trend lines in Martha’s treatment graphs, anxiety and activity engagement had a zero trend; meaning that the data was stable and 80 – 90% of the data points fall within a 15% range of the median level. Martha’s treatment data suggested that when her anxiety decreases her activity engagement increases and vice versa. Refer to Appendix I for treatment data and graphs with trend lines.
Figure 4.1: Treatment Recording of Martha’s Daily Anxiety Levels
● – weekdays (Monday to Thursday) ▲ – weekends (Friday to Sunday)

Figure 4.2: Treatment Recording of Martha’s Frequency of Activity Engagements
● – weekdays (Monday to Thursday) ▲ – weekends (Friday to Sunday)
Amy Woods

The use of an activity schedule and coping techniques had been implemented for seven weeks and they were effective at decreasing anxiety and increasing activity engagement. Amy’s anxiety decreased 27.7% (Figure 5.1) and activity engagement increased 35.9% (Figure 5.2) since implementation of the program. Amy’s data suggested that her daily anxiety decreased compared to the baseline as her average anxiety level decreased from $M=15.9$ (SD=5.6) to $M=11.3$ (SD=5.5). Furthermore, the data indicated that Amy’s daily activity engagement increased compared to the baseline as her average activity engagement increased $M=5.4$ (SD=1.4) to 9.2 (SD=2.2). Amy and her case management worker were impressed with the outcomes Amy achieved. Both Amy and her case management worker were eager to continue implementation in hopes that Amy would achieve greater success. Amy, thus far, was able to complete objective five for anxiety level (decreased anxiety level by nine points) and objective five for activity engagement (increased activity engagement by five additional activities). From Amy’s data it appeared that weekdays and weekends did not differ, as there were days when anxiety and activity engagement were high and low. According to the trend line on Amy’s anxiety graph, her data had a zero trend indicating that her data was stable and 80 – 90% of the data points fall within a 15% range of the median level. However, the trend line located on her activity engagement graph appeared to increase, thus suggesting that her activity engagement would continue increasing. Amy’s treatment data indicated that when her anxiety was low she was more likely to engage in additional activities and vice versa. Refer to Appendix J for treatment data and graphs with trend lines.
Figure 5.1: Treatment Recording of Amy’s Daily Anxiety Levels
● — weekdays (Monday to Thursday)  ▲ — weekends (Friday to Sunday)

Figure 5.2: Treatment Recording of Amy’s Frequency of Activity Engagements
● — weekdays (Monday to Thursday)  ▲ — weekends (Friday to Sunday)
The use of an activity schedule and coping techniques had been implemented for seven weeks, but Kelly only received four weeks of implementation because of missed and cancelled appointments. Despite being behind in treatment, activity schedule and coping techniques were effective at decreasing Kelly’s anxiety and increasing her activity engagement. Kelly’s daily anxiety decreased 23.4% (Figure 6.1) and activity engagement increased 126.9% (Figure 6.2) since implementation of the program. Kelly’s data indicated that her anxiety decreased compared to the baseline as her average daily anxiety level decreased from $M=38.1$ (SD=7.9) to $M=28.1$ (SD= 8.3). In addition, the data also suggested that Kelly’s daily activity engagement increased compared to the baseline as her average activity engagement increased from $M=2.6$ (SD=.87) to 6.2 (SD=1.8). Kelly and her case management worker were content with her outcomes; however, her case management worker would have liked Kelly to follow through with more appointments, as she may have achieved greater outcomes. Kelly was willing to continue the program as she had developed a routine and enjoyed utilizing the coping techniques. Kelly, thus far, was able to complete objective four for anxiety level (decreased anxiety by eight points) and objective four for activity engagement (increased activity engagement by four additional activities). From Kelly’s data it appeared that weekdays and weekends did not differ, as there were days when anxiety and activity engagement were high and low. According to the trend line on Kelly’s anxiety graph, her data had a slightly decreasing trend indicating that her anxiety may continue to decrease. The trend line on Kelly’s activity engagement graph was increasing, thus suggesting that her activity engagement may continue to increase. Kelly’s data indicated that when her anxiety was low her activity engagement was high and vice versa. Refer to Appendix K for treatment data and graphs with trend lines.
**Figure 6.1:** Treatment Recording of Kelly’s Daily Anxiety Levels
- ● — weekdays (Monday to Thursday)
- ▲ — weekends (Friday to Sunday)

**Figure 6.2:** Treatment Recording of Kelly’s Frequency of Activity Engagement
- ● — weekdays (Monday to Thursday)
- ▲ — weekends (Friday to Sunday)
Table 3: Recording of Daily Anxiety Levels Using the Beck Anxiety Inventory

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<th>Kelly Jones</th>
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<td>Treatment</td>
<td>Baseline</td>
</tr>
<tr>
<td>Mean</td>
<td>20.3</td>
<td>12.8</td>
<td>15.9</td>
</tr>
<tr>
<td>Median</td>
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<tr>
<td>Standard Deviation</td>
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</table>

Table 4: Recording of Frequency of Daily Activity Engagements

<table>
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<tr>
<th></th>
<th>Martha Hicks</th>
<th>Amy Woods</th>
<th>Kelly Jones</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Treatment</td>
<td>Baseline</td>
</tr>
<tr>
<td>Mean</td>
<td>3.1</td>
<td>5.5</td>
<td>6.4</td>
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<tr>
<td>Median</td>
<td>3.0</td>
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</tr>
<tr>
<td>Standard Deviation</td>
<td>0.7</td>
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Follow Up

Follow up was completed with each participant two months following termination of the treatment phase. Follow up consisted of the author phoning the participants. During the phone calls the author and the participants completed the Beck Anxiety Inventory pertaining to the previous day and participants reported the frequency of daily activity engagements that occurred the previous day. According to the follow up data all participants continued to exhibit lowered anxiety levels and increased activity engagement. Martha’s anxiety level was 16 (Figure 4.1) which was higher than the average anxiety level collected during treatment (12.8), but lower than the average anxiety level collected during baseline (20.3). Martha’s daily activity engagement was 6 (Figure 4.2) which was higher than the average activity engagement collected during treatment (5.5) and baseline (3.1). Amy’s anxiety level was 12 (Figure 5.1) which was higher than the average anxiety level collected during treatment (11.3), but lower than the average anxiety level collected during baseline (15.9). Amy’s daily activity engagement was 11 (Figure 5.2) which was higher than the average activity engagement collected during treatment (9.2) and baseline (6.4). Kelly’s anxiety level was 29 (Figure 6.1) which was higher than the average anxiety level collected during treatment (28.1), but lower than the average anxiety level collected during baseline (38.1). Kelly’s daily activity engagement was 5 (Figure 6.2) which was lower than the average activity engagement collected during treatment (6.3) and higher than the average activity engagement collected during baseline (2.6).
Chapter V: Discussion

Summary of Results

This study confirmed that activity schedules, that incorporate time to utilize progressive muscle relaxation and thought stopping, were effective at decreasing anxiety and increasing activity engagement among independent living adults who experience anxiety. All participants were able to decrease anxiety levels and increase activity engagement compared to baseline. This study supports the link between anxiety and activity engagement. When participants’ anxiety levels were lowered they were more likely to engage in an increased amount of activities, and vice versa, thus suggesting a relationship between anxiety and activity engagement. The outcomes achieved from this study also supported progressive muscle relaxation and thought stopping as effective in facilitating a reduction in anxiety levels among adults who experience anxiety. The treatment phase, varied for each participant, was successful in decreasing anxiety levels and increasing activity engagement for all participants, consequently signifying that the treatment may have been effective at improving the participants’ quality of life.

Follow up data indicated that all participants continued to show improvement in both anxiety level and activity engagement compared to baseline data, thus suggesting that this study’s effective was maintained two months after termination of the treatment phase. Moreover, follow up data provided additional support suggesting that the treatment was effective at decreasing anxiety and increasing activity engagement. In addition, during follow up all participants reported that they continued to utilize both coping techniques independently within the house and outside of the home to manage their anxiety. Participants reported that they were satisfied with the gains they achieved from the study and enjoyed using the activity schedules as they prompted the use of the coping techniques and that resulted in lowered anxiety levels. Anxiety continues to impact the lives of the participants, however, after participating in this study they were better able to manage and reduce their anxiety, as a result allowing them to engage in scheduled daily activities.

Strengths

This study contains multiple strengths. A strength of this study was that three participants were involved in the study, therefore, outcomes achieved were likely more reliable and convincing compared to a single case study. In addition, the three participants involved in the study suffered from various degrees of anxiety; therefore, supporting the use of the treatment was multiple levels of anxiety. A further strength of the study was that the author collaborated with both the participants and their case management workers to encourage commitment from both parties and to tailor the program to their needs and desires. Including their input into the development of the program helped to establish realistic goals and expectations. Participants were eager to decrease anxiety and increase activity engagement; therefore, the study was inherently appealing. The case management workers hoped that the treatment would increase participants’ independence, thus creating more opportunity for the workers to support other individuals who need assistance. The program sought to increase the participants’ independence through self monitoring, self reports, and self reinforcement. After participating in the program participants, were less likely to rely on their case management worker to help manage and control anxiety because they could independently cope with their anxiety through the use of the learned coping techniques.
Furthermore, the study was mostly conducted within the participants’ homes, therefore, supporting the development of response and stimulus conditioning. Towards the end of the treatment phase, participants were able to generalize the conditioning effect by meeting at their case management worker’s office. This program was beneficial to the case management workers’ agency because it could be implemented with similar clients and those clients would likely achieve similar outcomes. Moreover, an important strength was that participants were given choices throughout the study as to when they were going to utilize their coping techniques and what activities they wished to accomplish. Lastly, the positive effects achieved from the study enabled the participants to gain a sense of self worth by knowing they could manage their anxiety and cope with their mental illness symptoms, which in turn could have contributed to an increase in personal growth and quality of life. This was shown to be true from states that the participants would say to the author.

**Limitations**

There are three limitations to this program. Firstly, the data collection methods, the Beck Anxiety Inventory and the activity schedule, were self-report and self-monitoring. Self-report assessment may not always produce reliable results because participants are required to relay on their memory and they may easily forget important information (Rabbitt & Abson, 1999). In addition, some psychological functioning is believed to be unconscious (Krueger & Kling, 2000), so participants may be unaware of their symptoms when reporting anxiety levels on the Beck Anxiety Inventory, as it covers psychological functions. In addition, Kanfer (1970) noted that there are some limitations to self-monitoring. When participants record their own data (self-monitoring) there is concern that the data may not be accurate, as there are no external agents to confirm or discount the recorded results. As well, participants are likely to know the desirable outcome and because of that they may skew their results in order to achieve that success (Kanfer, 1970). In addition, the scores on the Beck Anxiety Inventory may have been subject to a re-call effect as the participants were using the inventory daily to record their anxiety levels. A re-call effect implies that the participants remembered their scores on the inventory from the previous day and that influenced the way in which they recorded their scores the following day.

Secondly, for this program to demonstrate an effect, the chain of behaviours (coping technique, reduced anxiety, activity engagement) must all occur because one missed step will affect the results, leaving no definitive explanation for the achieved outcome. Lastly, participants were not obligated to take part in this program; as a result, participants missed or cancelled appointments. For example, results obtained from Kelly may not accurately show the effectiveness of the program, as she missed two full weeks of treatment. All the other results reported above are representative of the program, as Martha only neglected one appointment and Amy followed through with all appointments. Motivation towards treatment is important because if participants are not motivated, then they will likely not achieve high quality outcomes. Kelly may have achieved greater results if she were to have displayed a higher level of motivation.

**Multilevel Challenges to Service Implementation**

**Client Level**

Participants’ motivation towards the program and understanding the benefits of the program was sometimes lacking, as they would miss or cancel meetings and/or would not
complete the weekly data collection sheets. Honesty while collecting data and reporting information during meetings was another challenge because the author was not present during data collection and utilization of coping techniques outside of meetings, therefore, information reported and outcomes achieved may not be accurate. In addition, the extent to which participants were forthcoming during meetings and phones was an issue. Some participants communicated vaguely, making it difficult to gather accurate and detailed information. Lastly, participants had limited knowledge about their mental illness and treatment options, making it challenging to explaining the study and gather background information about the participants’ anxiety. A way to overcome this challenge would be to have a psychoeducation session prior to treatment to discuss how the participants’ mental health is interfering with their daily live and discuss the benefits of treatment by highlighting ways in which they can mange their symptoms.

Program Level
Case management workers have heavy caseloads so they were unable to be involved in the treatment meetings and occasional reinforcement because of lack of time. However, the author maintained regular communication (at least once a week) with the participants’ case management worker, as well; case management workers provided assistance while developing the study. It would have been ideal to increase communication with case management workers but because they are involved in a variety of different activities (pilot projects, client notes, visiting clients, completing assessments, making and reviewing referrals, attending workshops and training) there was limited time to discuss participants’ involvement in the study. In addition, during implementation of the study, many case management workers were became ill, which also limited the time available discuss participants’ progress and/or concerns.

Organizational Level
Employees of the organization come from diverse educational backgrounds and experiences and this resulted in different views on how participants should be supported. During the developmental stage of this study it challenging to negotiate with regarding what the program would entail as many of them did not pose a background in behavioural psychology. A major challenge for all agency staff was time. Workers were given a maximum of one to two hours a week per participant and this study required a minimum of three to four hours a week per participant, thus resulting in staff not being able to implement the intervention independently.

Societal Level
Individuals with mental illnesses are not viewed unstable by the general community, and this contributes to the stigma experienced by this population, thus making it challenging to integrate those individuals into the community. In addition, there is poor communication between the community and agency. The community typically hears negative stories about mental illness and rarely hears the positive stories, which also contributes to the stigmas placed on this population. For example: staff may share negative stories about clients (without mentioning names), thus leading the community to believe that the mental health population is unfit. Furthermore, due to lack of government funding for programs, positions, and salaries, consequently, individuals are likely not receiving the highest quality of support. Lastly, there is a lack of resources in the community such as day programs, meal programs, recreational groups, and treatment groups, which made it challenging to get individuals to engage in activities within
the community. If society were to become educated about mental illnesses, then there would likely be more support from the community.

**Contribution to the Field of Behavioural Psychology**

This study was effective in increasing the utilization of coping skills, decreasing anxiety, and increasing activity engagement, independence, and quality of life among the participants. Within the Behavioural Psychology field, the overall goal is to aid individuals in achieving their maximum potential, while maintaining a client centred focus. Activity schedules are client focused in that individuals make their own decisions. Activity scheduling was effective at increasing the participants’ utilization of coping techniques and everyday living activities, therefore, helping them to reach their maximum potential. This new application of activity scheduling that incorporates time to utilize coping techniques is effective in reducing anxiety and increasing activity engagement. This could lead to broader usage of the technique in the field of behavioural psychology, thus, helping a variety of individuals cope with symptoms, gain independence, and maximize their potential.

**Recommendation for Future Research**

Follow-up was completed two months after termination of the treatment phase, however, follow up at six months, and then at a year would be ideal as it would contribute to the accuracy of the results and could provide further evidence to support the effectiveness of this study. In addition, it would determine if the results were maintained or if booster sessions need to occur. For future studies it would be ideal to involve more participants and to include participants who are only diagnosed with anxiety disorder. This would reduce the chance of confound variables and would likely make the results more reliable and convincing. In addition, this program may be successful when applied in a group setting. Instead of conducting individual meeting, with each participant, the participants could meet as a group to complete the program. Treatment integrity could also be improved by training the participants and case management workers together in a group, as everyone would be receiving the same quality of training. A group program would give participants the opportunity to socialize and support each other, as well would not require a lot of time from the facilitator, as they would be seeing everyone at once. As well, researchers could carry this program out using different coping techniques to determine best practices. Furthermore, it is recommended that case management workers continue reinforcing participants for continued usage of the program and reviewing coping techniques with participants. This will increase the likelihood of clients achieving greater success and independently continuing the program. In addition, future research should continue to explore other ways to prompt individuals to utilize coping techniques to decrease anxiety, thus allowing for an increase in activity engagement. Lastly, future research should use additional self reports along with the Beck Anxiety Inventory as this would provide further evidence regarding the outcomes of the treatment.
References


APPENDIX A
## Activity Schedule

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**TOTAL NUMBER OF DAILY ACTIVITIES**

**DAILY ANXIETY LEVEL**
APPENDIX B
The Beck Anxiety Inventory (BAI) is commonly used with adults (17 years or older) and requires approximately five to ten minutes to complete (Hewitt & Norton, 1993). The BAI covers both physiological and cognitive symptoms of anxiety. The purpose of the BAI is to discriminate between anxiety and depression. The BAI is a 21 item self-report assessment that measures the severity of an individual’s anxiety. Items on the inventory are rated on a scale from 0-3: 0 being not at all; 1 being mildly – but it didn’t bother me much; 2 being moderately – it wasn’t pleasant at times; and 3 being severely – it bothered me a lot. Individuals taking the BAI are asked to read and rate each item, by circling the number that best describes the item. The overall scores on the scale can range from 0-63, with high numbers reflecting severe anxiety and low numbers reflecting minimal anxiety.

The organization of the inventory consists of directions for completion at the top, followed by the assessment which is presented in a table format (5 columns and 23 rows). Following the completion of the assessment, the circled numbers are tallied to obtain an overall score, which is then written on the blank line provided. At the bottom of the inventory there is an interpretation section that provides a brief description of the overall score obtained. The interpretation section is divided into four categories: 0-7 being minimal anxiety; 8-15 being mild anxiety; 16-25 being moderate anxiety; and 26-63 being severe anxiety.
Coping Skills Technique Package

Progressive Muscle Relaxation
Based on:

Progressive muscle relaxation is used to gain a deep state of relaxation. It was developed 50 years ago when Dr. Edmund Jacobson realized that muscles could become relaxed from tensing them for a few seconds, and then releasing. This method of relaxation is especially helpful for individuals that experience anxiety along with muscle tension. Progressive muscle relaxation has been known to help with a variety of anxiety symptoms including: tightness in the shoulders and neck, tension headaches, backaches, tightness in the jaw and around the eyes, muscle spasms, high blood pressure, and insomnia. In addition, individuals that experience racing thoughts may find that their thoughts slow down once they are relaxed.

Progressive muscle relaxation involves tensing and releasing 16 different muscle groups within the body. The purpose of progressive muscle relaxation is to tense the 16 muscle groups, at different times, for 7 to 10 seconds, and then let go abruptly. Once you let go, wait 15-20 seconds for the muscle to get relaxed, and then notice the difference between when your muscle was tense and when it was relaxed. During this time people may want to say “I am relaxed”, as this may improve your focus on your relaxed muscles and may help your sense of relaxation.

If you are experiencing any pain while tensing a particular muscle group or have an injury to a particular muscle group, then progressive muscle relaxation should not be used with that muscle group.

Tips:
- Practice for at least 20 minutes a day. Two 20 minute practices are preferred as you will see greater effects. For the first while you may want to practice for 30 minutes, and then decrease to 20 minutes once you have mastered progressive muscle relaxation.
- Practice in a quiet area
- Practice at regular times
- Try practicing on a empty stomach
- Find a comfortable position
- Loosen any tight garments
- Decide not to worry about anything
- Have a passive attitude (Let it happen)
- Don’t strain your muscle when tensing
- Concentrate
- When releasing the tensed muscle do so suddenly and wait 15 to 20 minutes before moving on to the next muscle group
- If a muscle group is particularly tight you may want to tense and relax that group more then once
Exercise – Steps for using progressive muscle relaxation

NOTE: Hold all tensed muscle groups for 7 to 10 seconds, then release for 15 to 20 seconds. When releasing your tensed muscle say “relax” and focus on the tension leaving your muscle group and becoming relaxed. As well, breathe in deep and slowly when tensing the muscle and suddenly exhale when you release the muscle.

1. Take three breaths ensuring to breathe deep within the abdomen and exhale slowly while thinking about the tension in your muscle going away.
2. Clench your fists. Hold…and then relax.
3. Tighten your biceps by bringing your forearms up towards your shoulders. Hold…and then relax.
4. Tighten your triceps by extending your arms out straight and locking at the elbows. Hold…and then relax.
5. Tense the muscles in your forehead. This is done by raising your eyebrows. Hold…and then relax. Think about your forehead muscles becoming smooth and limp.
6. Tense the muscles around your eyes by shutting and clenching them. Hold…and then relax. Become aware of the deep relaxation scattering around your eyes.
7. Tighten your jaw by opening your mouth as wide as it can go. Hold…and relax. Allow your jaw to hang lose and your lips to spread.
8. Tighten your muscles in the back of your neck. This is done by pulling your head way back like you were trying to touch your head to your back. Focus on the tension only in your neck muscles. Hold…and then relax. This muscle group seems to be one of the tightest groups within the body so it is a good idea to repeat twice.
9. Take a few breaths and focus your attention on your head sinking into the surface it is resting on.
10. Tighten your shoulder by lifting them up towards your ears. Hold…and then relax.
11. Tighten your shoulder blade muscles by pushing them together. Hold…and then relax. This is another area within your body that is sometimes extra tense so you may want to repeat twice.
12. Tighten the muscles in your chest by taking a deep breath in. Hold…and then relax. Think of all the tension going way when you exhale.
13. Tighten your stomach muscles. This is done by sucking your stomach in. Hold…and then relax. Think of the relaxation spreading throughout your abdomen.
14. Tighten your lower back muscles by arching it up. Hold…and then relax.
15. Tighten your buttocks by pushing them together. Hold…and then relax. Image your hips becoming loose and relaxed.
16. Tighten the muscles in your thighs all the way down to your knees. Hold…and then relax.
17. Tighten your calf muscle. This is done by pulling your toes upwards and towards you. Hold…and then relax.
18. Tighten your feet. This is done by pushing your toes downward and towards the floor. Hold…and then relax.
19. Mentally scan your body for tension and if an area seems tense repeat that muscle group again once or twice.
20. Image a wave of relaxation going through your body. Starting at your head and moving down towards your toes.

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After you are done progressive muscle relaxation it may help to visualize yourself in a peaceful situation. Visualization can also help to relax your body allowing your anxiety to decrease. Ensure to image every detail of the setting or situation such as smells, feelings, taste, and sounds. Continue to inhale and exhale. Image your tension loosening, your heart rate slowing down, and breathing deep. Examples of a peaceful situation would be lying on the beach or sitting in the forest. Once your body is totally relaxed you will gradually be able to leave your peaceful situation by opening your eyes and sitting up if you are lying down. During this time you may want to count from 1 to 5 and at each number say “begin to come back up to an alert, wakeful, and refreshed state” It is important to continue breathing from your abdomen as this will help to ensure a deep state of relaxation.

Thought Stopping
Based on:

Thought stopping is a technique that gives an individual the ability to stop thoughts that are over powering. This technique is used to stop thoughts that make an individual act spontaneous or uncontrollable. Negative thoughts sometime cause an individual to engage in binge-like behaviours, but the process of thought stopping breaks that power. Thought stopping allows individuals to think of more positive, healthy thoughts. As well, thought stopping can help an individual overcome obsessive ideas, images, thoughts, or fears.

There are many different ways to use thought stopping. You can use one or a combination of the following:

- Replace a thought with another thought. Example: the thought of eating would be replaced with the thought of exercising or engaging in a leisure activity such as walking or reading a book.
- When thinking of a thought you can interrupt that thought by hearing or saying the word “STOP”. Example: the thought of smoking a cigarette and “stop” is either said or heard.
- When thinking of an obsessive negative, unhealthy thought you can replace that thought with a positive, healthy one. Example: Instead of thinking about the negative things that could occur when you go on the bus, think about the positive things that could occur, such as having a good time and enjoying yourself.
- Detour your mind from negative, unhealthy thoughts. Example: When thinking about alcohol or drugs you could squeeze a ball or place an elastic band on your arm and snap it. This allows you to detour your thoughts and thinking more about squeezing the ball or snapping the elastic.

**Exercise – Thought Stopping**
This exercise involves thinking of an unwanted statement, stopping that statement, and counteracting the negative statement with a positive statement. Once you think of a positive
statement, write it down, and then rehearse the statement 10 times. The skills of counteracting may take a while to develop, but once you are able to notice your negative thoughts and counteract them with positive statements, you will begin to feel and think more positive.

When faced with a negative thought it is a good idea to ask your self some questions:
1. What is the evidence for this?
2. Is this always true?
3. Has it been true in the past?
4. What are the odds of this happening?
5. What is the worst that could happen? What is so bad about that? What would you do if the worst happened?
6. Are you looking at the whole picture?
7. Do I really what to do this to myself?
8. What am I telling myself that is making me feel this way?
9. Do I really want to stay upset

Guidelines:
1. Make sure to relax and you may want to use breathing exercises before practicing thought stopping because it is easier to stop a thought when you relaxed.
2. Set an alarm clock or timer for 1, 2, or 3 minute intervals. Or chose another personal preference to act as the timer or alarm clock.
3. When you are relaxed think of an unwanted thought
4. When you hear the alarm clock or timer goes off write down the negative, unwanted thought.
5. Then try to disrupt the thought by counteracting the negative statement with a positive statement.
6. You can use the questions above or the positive statement below to help create a positive statement.
7. Once you think of a positive statement, write it down, and then rehearse the statement(s) 10 times.

Adding in personal preferences:
Instead of using a timer or alarm clock you can choose to:
- squeeze a ball
- place elastic around your wrist and snap it
- Say or whisper “stop”
- Pinch yourself
- Pressing your finger nails into your palm
- If your eyes are closed you can open them
- Rub a special object
- Look in a different direction
- Touch a special object

These are just suggestion to help you find your personal preference. Try to find a personal reference that helps you to stop your thought and redirect that thought towards a positive, rational thought.
Use this table below to write down your negative and positive statements.

<table>
<thead>
<tr>
<th>Negative Self-Talk</th>
<th>Positive Self-Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Positive Self Statements: These statements may help you come up with positive statements**

- My mind is calm
- I can stay calm and relaxed in every situation
- I can control my thoughts
- I have solved problems like this before
- I can handle this situation
- I am a capable individual that can do anything I want to
- I am a deserving individual
- I am a great person and I love myself for who I am
- I deserve to relax and enjoy time to myself
- Great things happen daily in my life
- Life has many opportunities that I must try
- What I am able to do is endless
- I have the ability to believe in myself
- If a change comes my way, then I will be able to handle that change
- I am unable to control other people and situations, however, I can control myself and how I express my feelings
- As a person it is okay to be uncertain at times
- It is normal to sometimes not be in control of everything
- I like to be loved and accepted, however, I can still accept and like myself without others approval
Dear Joe Cox,

I am a student in the Bachelor’s Degree in Behavioural Psychology program at St. Lawrence College. This four-year degree program is based on a behavioural framework, which has been demonstrated to be effective in developing positive skills with a wide range of individuals. Currently, I am completing an Applied Thesis that involves an intervention or project that I will summarize in a written report.

My program, Activity Schedules to Increase the Use of Coping Techniques and Activity Engagement in Adults Diagnosed with Mental Health Disorders Who Experience Anxiety, will include participating in an interview, recording daily anxiety levels and activity engagement, setting times to practice coping techniques, weekly meetings, phone calls and outings with the author, setting weekly goals aimed at increasing activity engagement. This client-focused intervention/project will be developed in collaboration with you, the agency’s staff, and team members. The total amount of time that will be require will be four hours a week from the signed date at the bottom till December 5, 2008

The benefits of participating in this project are decreased anxiety, increased engagement in everyday living activities and independence. The risks of participating in this project are minimal; however, there is a risk that you may become upset upon not meeting your weekly goals that you set for yourself. The program is not guaranteed to decrease your anxiety, nor to increase your activity engagement.

This project has been approved by Community Mental Health Services and by Jen Fox, Team Leader and by the St. Lawrence College Research Ethics Board (REB). The intervention/project will be developed under the supervision of Diane Nicholson, my supervisor from St. Lawrence College and in collaboration with Tim Heart of the Case Management Team at Community Mental Health

I would like your permission to implement the program described above. All information collected will be kept strictly confidential. The information will be coded and stored under a password on a computer hard drive. Upon request, we will gladly share a copy of a brief report of the intervention. The information gathered in this program will be shared with the case management worker, and the author’s supervisor. As well, information will be documented, without identifying you, in my Placement Report, Thesis, and poster presentations, and copies could be placed in the St. Lawrence College library or on the school’s Behavioural Psychology website. Participation in this project is voluntary and you may refuse or withdraw at anytime without incurring undue biases to your current or future treatment.

If you agree Joe Cox to participate in the project, please complete the form at the bottom of this letter and return it to me as soon as possible. A copy of this signed document will be given to you for your own records.

I sincerely appreciate your cooperation. If you would like to receive more information about the project or have additional questions or concerns, please contact my College Supervisor, Diane Nicholson, Institutional Mental Health Initiative Joyceville Institution, at 613-356-6505.

Sincerely,

Lisa Lynch
St. Lawrence College Student
I, ______________________, being the legally authorized consent giver for ________, understand and consent to the following.

I, ______________________, understand and consent to the following.

**NOTE:** all information identifying you Jon Cox will be removed from any reports to protect confidentiality

_____ I consent _____________________ to participate in the intervention/project conducted by Lisa Lynch.

_____ I consent for the data collected as part of this intervention/project to be put in a report in the college library.

_____ I consent for the data collected as part of this intervention/project to be presented at a conference.

_____ I consent for the data collected as part of this intervention/project to be published in a peer reviewed journal or professional publication.

Client/Guardian Signature: ______________
Date: ____________________________
Printed Name: ____________________________

Witness Signature: ________________________
Date: ____________________________
Printed Name: ____________________________

SLC Student Signature: __________________
Date: ____________________________
Printed Name: ____________________________
Interview with the Client

1. Tell be a bit about your self.

2. What do you like and dislike?

3. What education have you received?

4. What jobs have you worked?

5. Were you married?

6. Tell me about your marriage.

7. Tell me about your family. Do you have any siblings? Do you have any children?

8. Tell me a bit about your past. Did you have a good relationship with your parents / siblings?

9. What is a typical day like for you?

10. When did you start to experience anxiety?

11. How do you manage your anxiety?

12. What do you think contributes to your anxiety?

13. Have you ever been hospitalized due to anxiety?

14. What does your anxiety typically look like?

15. When do you experience anxiety?

16. If you could rate your anxiety from 1-10 what level would you say you are at?

17. Have you received any professional assistance with your anxiety?

18. Would you like to increase your activity engagement and if so what activities would you like to do?

19. If you are currently taking medication for anxiety, do you find the medication helpful?

20. Do you feel like there is hope out there and that one day you will be able to manage your anxiety?
Baseline Recording of Martha’s Daily Anxiety Levels and Frequency of Activity Engagements

**September 25, 2008 – October 1, 2008**

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
<th>3</th>
<th>3</th>
<th>3</th>
<th>2</th>
<th>3</th>
<th>3</th>
<th>4</th>
<th>Avg. for week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
<td>17</td>
<td>30</td>
<td>32</td>
<td>37.5</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td>Avg. for week 22</td>
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**October 2, 2008 – October 8, 2008**

<table>
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<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>5</th>
<th>3</th>
<th>Avg. for week 3</th>
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</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>24</td>
<td>19</td>
<td>28</td>
<td>15</td>
<td>12</td>
<td>10</td>
<td>Avg. for week 18.5</td>
</tr>
</tbody>
</table>
Figure 1.1: Baseline Recording of Martha’s Daily Anxiety Levels

● – weekdays (Monday to Thursday)  ▲ – weekends (Friday to Sunday)

Figure 1.2: Baseline Recording of Martha’s Frequency of Activity Engagements

● – weekdays (Monday to Thursday)  ▲ – weekends (Friday to Sunday)
APPENDIX G
Baseline Recording of Amy’s Daily Anxiety Levels and Frequency of Activity Engagements

*September 25, 2008 – October 1, 2008*

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>6</th>
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<th>6</th>
<th>8</th>
<th>Avg. for week 6</th>
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<tbody>
<tr>
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<td>22</td>
<td>14</td>
<td>15</td>
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<td>6</td>
<td>4</td>
<td>Avg for week 13</td>
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*October 2, 2008 – October 8, 2008*

<table>
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<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>7</th>
<th>7</th>
<th>7</th>
<th>6</th>
<th>7</th>
<th>4</th>
<th>Avg. for the week 6.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
<td>17</td>
<td>16</td>
<td>20</td>
<td>14</td>
<td>19</td>
<td>19</td>
<td>24</td>
<td>Avg. for the week 18.5</td>
</tr>
</tbody>
</table>
Figure 2.1: Baseline Recording of Amy’s Daily Anxiety Levels
● – weekdays (Monday to Thursday) ▲ – weekends (Friday to Sunday)

Figure 2.2: Baseline Recording of Amy’s Frequency of Activity Engagements
● – weekdays (Monday to Thursday) ▲ – weekends (Friday to Sunday)
Baseline Recording of Kelly’s Daily Anxiety Levels and Frequency of Activity Engagements

**September 25, 2008 – October 1, 2008**

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
<th>3</th>
<th>3</th>
<th>4</th>
<th>1</th>
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<th>3</th>
<th>Avg. for week 3</th>
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<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>43</td>
<td>24</td>
<td>41</td>
<td>52</td>
<td>31</td>
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**October 2, 2008 – October 8, 2008**

<table>
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<th>2</th>
<th>2</th>
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<td>32</td>
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<td>43</td>
<td>48</td>
<td>36</td>
<td>Avg. for the week 39.4</td>
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</table>
**Figure 3.1:** Baseline Recording of Kelly’s Daily Anxiety Levels

- ● — weekdays (Monday to Thursday)
- ▲ — weekends (Friday to Sunday)

**Figure 3.2:** Baseline Recording of Kelly’s Frequency of Activity Engagements

- ● — weekdays (Monday to Thursday)
- ▲ — weekends (Friday to Sunday)
APPENDIX I
# Treatment Recording of Martha’s Daily Anxiety Levels and Frequency of Activity Engagements

**October 13, 2008 – October 19, 2008**

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>6</th>
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<th>7</th>
<th>5</th>
<th>Avg. for the week 5.7</th>
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</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>19</td>
<td>22</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>Avg. for the week 12.9</td>
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**October 20, 2008 – October 26, 2008**

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
<th>7</th>
<th>5</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>4</th>
<th>6</th>
<th>Avg. for the week 5.3</th>
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</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>15</td>
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<td>13</td>
<td>32</td>
<td>27</td>
<td>22</td>
<td>Avg. for the week 18.1</td>
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**October 27, 2008 – November 2, 2008**

<table>
<thead>
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<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>4</th>
<th>5</th>
<th>5</th>
<th>4</th>
<th>6</th>
<th>Avg. for the week 5</th>
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</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
<td>10</td>
<td>7</td>
<td>14</td>
<td>10</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>Avg. for the week 8.9</td>
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**November 3, 2008 – November 9, 2008**

<table>
<thead>
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<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>4</th>
<th>6</th>
<th>7</th>
<th>7</th>
<th>9</th>
<th>5</th>
<th>Avg. for the week 6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
<td>14</td>
<td>16</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>7</td>
<td>10</td>
<td>Avg. for the week 9.6</td>
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</table>

**November 10, 2008 – November 16, 2008**

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
<th>8</th>
<th>7</th>
<th>7</th>
<th>7</th>
<th>4</th>
<th>5</th>
<th>5</th>
<th>Avg. for the week 6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>4</td>
<td>10</td>
<td>8</td>
<td>18</td>
<td>18</td>
<td>15</td>
<td>Avg. for the week 11.1</td>
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</tbody>
</table>
November 17, 2008 – November 23, 2008

| NUMBER OF DAILY ACTIVITIES | 3 | 4 | 5 | Avg. for the week
|----------------------------|---|---|---|------------------|
| DAILY ANXIETY              | 23| 21| 20| Avg. for the week
|                            |   |   |   | 21.3             |
Figure 4.1: Treatment Recording of Martha’s Daily Anxiety Levels
- weekdays (Monday to Thursday)
- weekends (Friday to Sunday)
- baseline trend line
- treatment trend line

Figure 4.2: Treatment Recording of Martha’s Frequency of Activity Engagements
- weekdays (Monday to Thursday)
- weekends (Friday to Sunday)
- baseline trend line
- treatment trend line
APPENDIX J
## Treatment Recording of Amy’s Daily Anxiety Levels and Frequency of Activity Engagements

### October 13, 2008 – October 19, 2008

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>6</th>
<th>11</th>
<th>6</th>
<th>8</th>
<th>9</th>
<th>8</th>
<th>Avg. for the week 7.9</th>
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<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>9</td>
<td>18</td>
<td>18</td>
<td>5</td>
<td>12</td>
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<td>Avg. for the week 12.1</td>
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### October 20, 2008 – October 26, 2008

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<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>6</th>
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<th>Avg. for the week 7.7</th>
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<tbody>
<tr>
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<td>Avg. for the week 12.4</td>
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### October 27, 2008 – November 2, 2008

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<th>11</th>
<th>12</th>
<th>11</th>
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<th>10</th>
<th>Avg. for the week 10.4</th>
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<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>8</td>
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<td>6</td>
<td>5</td>
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<td>Avg. for the week 6.7</td>
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### November 3, 2008 – November 9, 2008

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>5</th>
<th>5</th>
<th>8</th>
<th>7</th>
<th>9</th>
<th>7</th>
<th>Avg. for the week 7.3</th>
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<tr>
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<td>15</td>
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<td>17</td>
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<td>16</td>
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### November 10, 2008 – November 16, 2008

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<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
<th>10</th>
<th>9</th>
<th>9</th>
<th>10</th>
<th>9</th>
<th>9</th>
<th>11</th>
<th>Avg. for the week 9.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
<td>14</td>
<td>15</td>
<td>12</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>Avg. for the week 10.4</td>
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73
November 17, 2008 – November 23, 2008

<table>
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<th>10</th>
<th>11</th>
<th>10</th>
<th>11</th>
<th>11</th>
<th>8</th>
<th>9</th>
<th>Avg. for the week 10</th>
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</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
<td>17</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>21</td>
<td>15</td>
<td>Avg. for the week 13</td>
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November 24, 2008 – November 30, 2008

<table>
<thead>
<tr>
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<th>8</th>
<th>14</th>
<th>11</th>
<th>15</th>
<th>10</th>
<th>10</th>
<th>Avg. for the week 11.3</th>
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</thead>
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<td>DAILY ANXIETY</td>
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<td>0</td>
<td>7</td>
<td>7</td>
<td>Avg. for the week 8.7</td>
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Figure 5.1: Treatment Recording of Amy’s Daily Anxiety Levels

- weekdays (Monday to Thursday)
- weekends (Friday to Sunday)

Baseline trend line: ...
Treatment trend line: ...

Figure 5.2: Treatment Recording of Amy’s Frequency of Activity Engagements

- weekdays (Monday to Thursday)
- weekends (Friday to Sunday)

Baseline trend line: ...
Treatment trend line: ...
APPENDIX K
Treatment Recording of Kelly’s Daily Anxiety Levels and frequency of Activity Engagement

**October 20, 2008 – October 26, 2008**

<table>
<thead>
<tr>
<th>NUMBER OF DAILY ACTIVITIES</th>
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<th>5</th>
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<th>Avg. for the week 4.2</th>
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<tr>
<td>DAILY ANXIETY</td>
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<td>40</td>
<td>34</td>
<td>36</td>
<td>36</td>
<td>Avg. for the week 33.8</td>
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**November 3, 2008 – November 9, 2008**

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<th>7</th>
<th>7</th>
<th>7</th>
<th>6</th>
<th>7</th>
<th>Avg. for the week 6.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>-</td>
<td>30</td>
<td>13</td>
<td>22</td>
<td>32</td>
<td>18</td>
<td>Avg. for the week 25.2</td>
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**November 10, 2008 – November 16, 2008**

<table>
<thead>
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<th>5</th>
<th>8</th>
<th>8</th>
<th>6</th>
<th>4</th>
<th>Avg. for the week 6.7</th>
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</thead>
<tbody>
<tr>
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<td>18</td>
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<td>28</td>
<td>25</td>
<td>31</td>
<td>46</td>
<td>Avg. for the week 29.3</td>
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**November 24, 2008 – November 30, 2008**

<table>
<thead>
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<th>7</th>
<th>7</th>
<th>8</th>
<th>4</th>
<th>9</th>
<th>10</th>
<th>Avg. for the week 7.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY ANXIETY</td>
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<td>24</td>
<td>22</td>
<td>24</td>
<td>35</td>
<td>25</td>
<td>24</td>
<td>Avg. for the week 25.6</td>
</tr>
</tbody>
</table>
Figure 6.1: Treatment Recording of Kelly’s Daily Anxiety Levels
● – weekdays (Monday to Thursday) ▲ – weekends (Friday to Sunday)
▪▪▪▪▪▪▪ - baseline trend line ── - treatment trend line

Figure 6.2: Treatment Recording of Kelly’s Frequency of Activity Engagement
● – weekdays (Monday to Thursday) ▲ – weekends (Friday to Sunday)
▪▪▪▪▪▪▪ - baseline trend line ── - treatment trend line