Reduction of Anxiety of Family Caregiver of Person with Dementia Through Cognitive Restructuring Technique

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ABSTRACT

This study was done in line with three main objectives. Firstly, it was to identify the level of anxiety of the subject before and after cognitive restructuring technique (CRT) intervention. It was followed by the objective to identify the anxiety symptoms of the subject before CRT intervention. The last objective was to identify the effect of the application of CRT on the subject's anxiety across six points after CRT intervention. This is a mixed method research using single subject research design. The subject has been selected using purposive sampling method. Data was collected using Beck Anxiety Inventory (BAI) at three phases which are pre-intervention, intervention (six counseling sessions), and post-intervention to measure the level of anxiety experienced by the subject. The results revealed that there was a significant reduction of level and symptoms of anxiety in the subject. The score 100% of PND, verbatim transcripts and MSE showed strong positive effects of CRT treatment on subject's anxiety. As a conclusion, CRT is effective in reducing the subject's level of anxiety related to caregiving of demented person. The outcomes of this study provide the insight that family caregivers of demented persons are vulnerable population for psychological distress and their need for psychosocial support should be enhanced.

Keywords: anxiety, family caregiver, dementia, cognitive restructuring technique

Introduction

Anxiety is a kind of emotional reaction to danger which is characterized by worried thoughts, nervousness and feelings of tension. This reaction is aroused when an individual who has certain beliefs about the dangerousness of situations which hold important individual meaning for him or her (Sanders & Wills, 2003). It is a complex mixture of emotions, actions, physiological reactions, and thoughts develops once events, situations, mental events and sensations are viewed as dangerous. Caregiving is a known source of stress to caregivers as they are potentially exposed to severe stress over a prolonged period of duration (Schultz & Martire, 2004). Psychological distress among family caregivers has been reported in the literature for nearly thirty years (Pearlin, et al., 1990). Cuijpers (2005) highlighted that caregivers of a relative with dementia is known to be associated with negative consequence of psychological and physical health. Findings have shown that anxiety is a commonly reported symptom among dementia caregivers (Sansoni et al., 2003) and it has impacted one in three family caregivers (Akkerman & Ostwald, 2004).

National Alliance for Caregiving AARP Public Policy Institute (2015) stated that the number of family caregivers who take care of loved ones at home with a serious illness is increasing and more diversified. In the literature on caregiving in the past three decades, studies showed that family caregivers were at higher risk to experience psychological distress when compared to family members who are not caregivers (Pruchno & Potashnik, 1989; Selltzer, 1992; Daire, Torres & Edwards, 2009). The negative consequences affected them are caused by the high demands on care associated with the demented persons' behavioural problems, communication challenges, and safety concerns. Indeed, the personal impacts of family caregiving can profoundly affect the physical, psychological, social, and spiritual well-being of the caregivers.

Dementia is a degenerative disease characterized by multiple symptoms of cognitive deficits such as loss of memory, agitation, delusion, impulsivity, loss of insight, loss of social tact, sleeping disorders (Dillon et al., 2013), poor judgment, and changes in personality (Rosdinom et al., 2011). As the demented patients gradually lose their physical and cognitive functions, intense attention and special personal care is required from caregivers. It was reported that the estimated prevalence of moderate to severe dementia among the Malaysian population is consistently at 5% (Department of Statistics Malaysia, 2014). Generally, the filial obligation and societal norm is still intact across all cultures in the local society and the family remains the main source of care for the frail elderly (Arokiasamy, 3 1997). Therefore, it is expected that there will be an increase in the number of family caregivers of demented persons with the progressive aging of the Malaysian population.

Dementia can have complex health, practical and social consequences for the person living with dementia and their family. Family caregiver is defined as a family member responsible for taking care of a spouse or parent with dementia (Meyer et al., 2015). They assume the responsibilities of assisting the demented patients in activities of daily living, managing their psychological and behavioural responses, and administering medicines. According to Cooper et al. (2006), caregivers of people with dementia frequently have anxiety symptoms. Hence, it is crucial to investigate the psychological impact of family caregivers of demented persons to ensure they are able to respond to the needs of the person with dementia while managing their own well-being.

Literature Review

Level of Anxiety on Caregiving

Anxiety prevalence was significantly increased in caregivers compared with the general population (Schulz et al, 1995). Parks and Pilisuk (1991) attributed anxiety as the typical consequence of caregiving of persons with dementia. Other researchers have consistently reported higher levels of anxiety among family caregivers compared to non-caregivers (Fisher & Laschinger, 2001; Pruchno, R. & Resch, N. 1989). Coope and colleagues (1995) examined family caregivers of demented patients using semi-structured diagnostic interviews reported anxiety prevalence rates approximately 20% among the caregiver. Caregivers' who have higher levels of psychological distress are found related to the demented persons' level of cognitive or behavioural impairment (e.g. agitation, aggressive behaviours, memory,

wandering; Clipp & George, 1993; Deimling & Bass, 1986; Miller, McFall & Montgomery, 1991) and their functional and behavioural characteristics (e.g. need for assistance with personal care).

Sociodemographic characteristics of demented adults and caregivers are linked to compromised mental health. It was reported that female caregivers reported higher level of anxiety compared to male caregiver but both had equal level of depression in caregiving of relatives having dementia (Parks et al., 1991). However, a local research group reported no significant relationship between caregiver burden and gender in their investigation of caregivers' socio-demographic variables and their perceived burden of care (Rosdinom et al., 2011). Interestingly, there are limited studies found in the local context which investigate the anxiety of caregivers among the male population in Malaysia.

Symptoms of Anxiety in Caregiving

In view of the multidimensional impact of anxiety on cognition, affect, behaviour, and physiological processes, researchers have investigated anxiety among family caregivers using various variable definitions (Akkerman et al., 2004). Dura, Stukenberg, and Kiecold-Glasser (1991) suggested that there were significant anxiety disorders among 10% of adult children caregivers with neither a family history nor a personal history of psychiatric disorder caring for demented parents. Chronic strains of caregiving have been associated with the onset of this psychiatric disorder. Akkerman and colleagues (2004) reported common distressing symptoms associated with prolonged care included anxiety, depression, frustration, guilt, anger, somatic symptoms (e.g. insomnia, headache, and stomach distress), poor relationship, and isolation. In another study done by Rodriguez et al., (2003), approximately 80% of caregivers suffered from sleep disorders, including those who claimed occasional awake.

Some studies have found significant relationship between the dysfunctional thoughts and psychological distress in caregivers. McNaughton et al. (1995) investigated the relationship between dysfunctional thoughts, stress, depression, and health in 89 dementia caregivers. The result showed that maintaining dysfunctional thoughts was related to depression, external locus of control and poor health in challenging situations. A six month's follow-up monitoring indicated reduction in irrational thoughts was linked to better subjective health of the caregivers. Stebbins and Pakenham (2001) reported that caregivers of traumatic brain injury patients who adhered to irrational beliefs showed higher level of psychological distress. They evaluated dysfunctional thoughts associated with the need for the avoidance of problems and rigidity. Higher emotional distress was also noted in Hispanic dementia caregivers who had dysfunctional thought in the appraisal of caregiving (Losada et al, 2006).

Choo et al. (2003) highlighted that caregiver's gender, ethnicity, age, level of education, household income, and other factors such as health status, social support and caregiver-patient relationship tend to have more impact than care recipient in care burden. The study found that Chinese and Indian dementia caregivers in Malaysia reported higher care burden than Malays. Based on the results of Choo et al. (2003) interview, the caregivers who performed caregiving full-time scored higher in burden than those caregivers who shared the responsibilities with siblings and those only supported financially.

Cognitive Restructuring Technique (CRT)

The treatment protocols of various cognitive behavioural techniques are based on the premise that cognitions influence anxiety and fear (Hofmann et al., 2013). The dysfunctional beliefs and cognitions contribute to the maintenance of anxiety disorder. This premise is one of the defining features of a variety of more traditional and modern CBT treatment protocols. Of various techniques under the umbrella of CBT, the technique developed to address dysfunctional thinking is known as cognitive restructuring (CR) (Kase & Ledley, 2007; Beck et al., 2011 & Corey, 2017). The tenet of such technique is modifying the client's thinking will modify his or her emotions and behaviour (Beck et al., 2011). Besides changing an individual's thinking, Beck (1995) added that such CRTs have the advantage of helping the client keep himself away from the thought.

In CRT, techniques are emphasized rather than creating insight in clients. It aims at teaching people change their irrational beliefs and self-defeating behaviours and guide them to achieve rational and logical attitude (Ghamari et al., 2015). This therapy motivates clients to accept their weaknesses and limitations. Therefore, a new belief which is healthy and effective has to be created by disputation. The objectives of disputing are to help the client to evaluate the rationality of his or her irrational beliefs and their rational alternatives (Austard, 2009). According to Kase et al. (2007), cognitive restructuring is a process consisting of four parts. It begins with the client identifying the anxious thoughts and then labeling them. It is followed by questioning the thought and considering whether there is a different way to view the situation. The last part is to develop an alternative thought which is more rational and realistic in viewing the situation. Clark (2014) highlighted that the therapeutic process of cognitive restructuring is made up of 3 components, collaborative empiricism, verbal intervention strategies and empirical hypothesis-testing.

Collaborative empiricism is associated with treating patients as informed consumers and providing them with information about their illness (Wong, 2013). According to Beck and Beck (2011), therapists do not generally have the idea the validity of a client's automatic thought. By using the process of collaborative empiricism, the therapist and patient can cooperate to test the client's cognitive processes. Clients and therapists become co-investigators in identifying goals for treatment, investigating clients' thoughts about treatment goals, and predicting barriers. Verbal intervention strategies are used by therapists directly to change maladaptive schematic content (Clark, 2014). The four most common strategies in verbal intervention in cognitive restructuring consist of evidence gathering, cost/benefit analysis, identifying cognitive errors, and generating alternative explanations.

The therapist always starts by inviting the client to examine and evaluate his or her thought and beliefs in his or her own personal experience. When using verbal intervention, the therapist avoids making attempts to convince the client of a more adaptive alternative belief instead of clinging to the maladaptive schema. Instead, the client is encouraged to generate an alternative view that provides the best fit with his or her real-life experience and would help in improving his or her emotional functioning. Empirical hypothesis-testing refers to "planned experiential activities, based on experimentation or observation, which are

undertaken by patients in or between cognitive therapy sessions" (Bennett-Levy et al., 2004, p. 8). Cognitive therapy utilizes experiences to achieve schematic restructuring. In comparison, behavioural therapy emphasizes on behavioural change. As a result, behavioural experimentation or hypothesis-testing is a key element of cognitive restructuring.

Johnco and colleagues (2014) did a research to examine whether declines in cognitive flexibility impacts on the ability to utilise certain CRT techniques, specifically cognitive restructuring skills in reducing anxiety and depression 44 older adults who have late-life anxiety and depression. Cognitive flexibility was defined as general cognitive ability to process multiple ideas, switch cognitive sets with flexibility, and inhibit habitual responding patterns in ever changing situations. They aimed to investigate whether cognitive flexibility relates to learning of cognitive restructuring skills over the course of 11-week therapy program and how it was related to overall treatment outcome in a group CRT program. The participants acquired cognitive restructuring skills during the therapy and practiced and used them outside of the therapy session to improve their maladaptive thoughts. The results of the study showed that better cognitive flexibility was associated with a greater reduction in the caregivers' self-report anxiety and depression. Moreover, it was revealed that the subjects who had better cognitive flexibility were able to alleviate emotional distress more effectively compared to those with poorer cognitive flexibility.

Methodology

This is a case study employed single subject research design (SSRD). The study aims to identify level and symptoms of anxiety and examine the effect of cognitive restructuring technique (CRT) on the family caregiver's anxiety in caregiving of demented person. SSRD is a systematic way that uses focused study on one individual with the intention of analysing the effect of an intervention (Foster, 2010). SSRD is culturally sensitive, practical in application, and able to support counselling with evidence. Human behaviours and characteristics can be understood and described in a more subjective way when SSRD is applied. The design form used for this study is A-B-A design, referring to three phases: phase A1, phase B, and phase A2. Phase A1 is a baseline phase before the intervention, phase B is the phase where introduction and application cognitive restructuring technique (CRT) is applied while phase A2 is another reversal baseline phase after the intervention (Foster, 2010). Non-probability purposive sampling method used to choose client who meet the specific requirement. The sample for this study is a client who currently provides caregiving to a loved one who has been diagnosed with dementia and presenting with common symptoms of anxiety such as nervousness, trembling, increased heart rate, sweating and indigestion. Sample took the Beck Anxiety Inventory (BAI). The client is a 49-year-old male. He reported experience bodily symptoms of anxiety such as increased heart rate, sweaty palms, and shaking when he is anxious. Quantitative and qualitative data is collected as this research employ a mixed-method design. Quantitative data is collected using an instrument known as Beck Anxiety Inventory (BAI) while qualitative data is collected through observations and interviews. Triangulation (BAI scale, verbatim, and MSE) is used to ensure the validity of the research.

Beck Anxiety Inventory (BAI) is used to collect the data of the level of anxiety of the client. BAI was created by Aaron T. Beck and his colleagues (Beck, Epstein, Brown & Steer, 1988). The updated BAI has been listed among the six most commonly used self- report measures for adolescent and adults (Osman, Hoffman, Barrios, Kopper, Breitenstein & Hahn, 2002). In this study, the BAI is used to measure the presence of symptoms and to calibrate the severity of general symptoms of anxiety commonly occurring in family caregivers of demented person. BAI is a 21-item multiple-choice and self-report instrument for measuring anxiety. The items describe the physiological, emotional, and cognitive symptoms of anxiety but not depression. Each of the items is a simple description of a symptom of anxiety in one of its 4 expressed aspects: (i) subjective (such as, "unable to relax"), (ii) neurophysiological (such as, "numbness or tingling"), (iii) autonomic (such as, "feeling hot") or (iv) panic-related (such as, "fear of losing control"). Each item in the BAI is rated on a 4-point Likert-scale with 0 being "not at all" and 3 being "severely, I could barely stand it." Scoring is done by adding scores for items (Chapmen et al., 2009). The total scores range from 0 to 63. The interpretation of scores are: 0-21, low anxiety; 22-35, moderate anxiety; 36-63, severe anxiety.

Observations and interviews are used throughout all the sessions to collect data for the symptoms of anxiety. All sessions are audio recorded in order for the researcher to review back the session. The audio recording for all sessions are then transcribed into the words for data analysis purpose. Observation is a method to investigate and examine client's affective, behavioural, and cognitive. Mental Status Examination (MSE) is a structured way of observing client that checks from client's appearance to cognitive thinking. Through observation, the congruency of client can be detected. MSE is used as the structured evaluation to assess patients' actions and thoughts (Polanski & Hinkle, 2000). MSE is filled by the counsellor at the end of each counselling session and it provides guidelines for counsellor to assess client's mental state during interview and it can also be used as the baseline for the following assessments in the treatment. There are 12 aspects that MSE assess, which are: appearance, attitude, behaviour, speech, affect, mood, thought processes, thought content, perception, orientation, memory/ concentration, and insight/ judgement.

The data for the effects of the cognitive restructuring technique (CRT) on the family caregiver's anxiety in caregiving of demented person is collected via BAI scale. The scale is administered to the client for 12 times. Three pre-test scores (during phase A1) and nine post-tests scores (6 scores during phase B and 3 scores during phase A2). This paper consists six counselling sessions in total and it focused on cognitive restructuring technique (CRT) on the family caregiver's anxiety in caregiving of demented person. During screening, client is asked to fill in BAI scale for three times in three separate days to get the baseline BAI scores of the client.

The level of anxiety of the client is identified by administering the BAI Scale to the client. Client is asked to answer all the 21 items and the sum score is the level of anxiety of the client. There is a total of 12 scores data collected throughout the three phases of study, three times before the intervention, six times during the intervention, and three times after the intervention. Descriptive data analysis is performed, and the data is plotted on a graph. In this

paper, the data collected (verbatim transcripts and observations based on MSE) for the symptoms of anxiety of the client is analysed using thematic analysis method (Vasimoradi et al., 2013) by identifying the theme from coding process and categorize the symptoms into 4 expressed aspects which are subjective (such as, unable to relax), neurophysiological (such as, numbness or tingling), autonomic (such as, "feeling hot") and panic-related (such as, "fear of losing control").

The effects of the treatment are assessed from the quantitative and qualitative data collected. Quantitative data refers to data collected using Beck Anxiety Inventory (BAI) while the qualitative data refers to data collected through verbatim transcript and MSE. Percentage of Non-Overlapping Data (PND) is applied to analyse the quantitative data through determining the effect of cognitive restructuring technique (CRT) on the family caregiver's anxiety in caregiving of demented person. PND is chosen as the method in this study as this study focuses on the improvement of the level of anxiety (Parker et al., 2011). PND is analysed as the percentage of Phase B data exceeding the highest data point in Phase A1 (Parker et al., 2011). While thematic analysis is applied to analyse the qualitative data. PND is calculated by dividing the non-overlapping data points in Phase B by the total number of data points in Phase B. As stated by Scruggs and Mastropieri (1998), the effect of the intervention ranges from 0% to 100%. If PND is equal or more than 90%, it means that the intervention is very effective. If PND is between 70% and 90% it means the intervention is effective, while PND between 50% and 70% indicates that the effect of the intervention is questionable. Lastly, PND that is equal or less than 50% means that the intervention is ineffective.

Result

Level of Anxiety

Figure 1 displays the overall result and trend in the level of anxiety based on the scores collected using BAI scale. The score was 40 during the first measurement, followed by 39 during the second measurement, and further increased to 41 when it was measured at the end point of Phase A1. Based on these readings, it was obvious that the subject experienced severe anxiety as interpreted by BAI score which indicates that scores in the category of 36 – 63 is considered as severe anxiety.

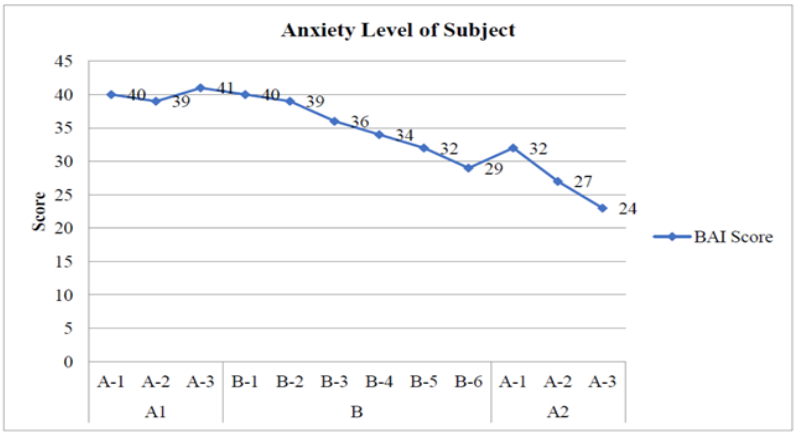

Figure 1: Level of Anxiety

As displayed in Figure 1 and Table 1, the family caregiver's BAI score was at severe level during the baseline, Phase A1. The score was 40 during the first measurement, followed by 39 during the second measurement, and further increased to 41 when it was measured at the end point of Phase A1. Based on these readings, it was obvious that the subject experienced severe anxiety as interpreted by BAI score which indicates that scores in the category of 36 – 63 is considered as severe anxiety.

Phase	BAI Administration	BAI Score	BAI Score Differences	Percentage of Differences	BAI Indication
A1	A1-1	40	-	-	Anxiety
	A1-2	39	- 1	-	Anxiety
	A1-3	41	+2	-	Anxiety
B	B-1	40	-	-	Anxiety
	B-2	39	-1	2.5%	Anxiety
	B-3	36	-3	7.7%	Anxiety
	B-4	34	-2	5.6%	Anxiety
	B-5	32	-2	5.9%	Anxiety
	B-6	29	-3	9.4%	Anxiety
A2	A2-1	32		-	Anxiety
	A2-2	27	-5	-	Anxiety
	A2-3	24	-3	-	Anxiety

Table 1: Results of BAI Scale

The subject's BAI scores showed a downward trend when intervention was implemented for six counselling sessions at Phase B. He reported a score of 40 after first intervention (B-1) and 39 at subsequent counselling session (B-2). A slight decrease of 2.5% was noted in the subject's anxiety level. The score went down to 36 after the subject had third treatment (B-3) which is equivalent to 7.7% and a further reduction of 2 points (5.6%) after the completion of the forth treatment (B4). His anxiety continued to improve by 5.9% (B-5 score, 32) with the continuous intervention. The score was markedly reduced by 9.6% during the sixth session (B-6) in which the BAI score was recorded at 29. This could be the outcome of the subject's understanding of the concepts of CBT and confidence in applying the technique. The total improvement in percentage of the subject's anxiety level was 31.1%. At the post-intervention phase (Phase A2), the subject reported a slight increase in his BAI score during the first measurement, i.e., 32. However, the subsequent score dropped to 27 and became 24 at the final measurement at Phase A2. Despite an upward spike of the score at the initial stage of Phase A2, the subject's anxiety was maintained consistently within the range of moderate level.

Symptoms of Anxiety of Family Caregiver

The researcher observed and identified various symptoms of anxiety in the subject during the counselling sessions. These symptoms were recorded in the transcripts and Mental Status

Examination (MSE). They are categorised into four main types: physiological, cognitive, emotional, and behavioural as listed in Table 2 as below:

Physiological	Cognitive	Emotional	Behavioural
• Tiredness • Inability to relax • Difficulty to sleep • Increased heart beat Sweating	• Self-conflict • Distorted thoughts - Labelling - Arbitrary interpretation - Fortune-telling - Imperatives - Catastrophizing	• Anxious • Annoyed • Helpless • Frustrated • Fear • Guilty • Nervous • Panic	• Shouting • Rushing • Punching

Table 2: Symptoms of Anxiety of Family Caregiver

Physiological Symptoms

Shaking:

My hands were shaky when I received that call from my dad…

(Session 1, Line 76)

Tiredness:

Ya, ya. It's very tiring you know. Just imagine every day I come home is already 8.30pm. If I missed the 8.00pm bus I'll reach home at 9.00pm…

(Session 1, Line 121)

Inability to relax:

It's hard for me to relax after the long day finishing work and attending to my mom…

(Session 1, Line 123)

Difficulty in sleeping:

Sometimes I think about the "to do" list for my mom until I can't sleep well.

(Session 1, Line: 125)

Increased heart rate

My heart was beating fast like horse running. I must go and see her as fast as I could. I told myself. Otherwise, it would be too late for me…

(Session 2, Line 44)

Sweating

Aiyo, the waiting almost killed me! My palms were sweating. How I wished the Grab driver drove like F1 driver…

(Session 2, Line 44)

Cognitive Symptoms

Self-conflict

It seems like my head and my heart have two thinkings. One thinks to be realistic, ok, my mom has dementia just accept her lah. But my heart still questions how can she behaves like that? There is conflict in me lah.

(Session 2, Line 123)

Distorted Thought

Since my mom got dementia I have been trying to give her the best care… The more I get worried. I'm rather useless.

(Session 2, Line 54)

I labelled myself as a failure when I thought that I didn't not manage to help her voice out her sadness due to her hardship she went through when she was younger.

(Session 4, Line 100)

Imperatives

I must take care of her at home and give her the best care. Many adult children take care of their elderly parents even though they work. Why I can't?

(Session 2, Line: 117)

I think that she should behave more normally. She is like everyday adding more problems to our lives…

(Session 3, Line 103)

Catastrophizing

I received a call from my dad. He said my mother was not feeling well. …Was she in critical condition? I started to be panicky.

(Session 2, Line 44)

Emotional Symptoms

Anxious

I…I often feel anxious in caring for my mom.

(Session 1, Line 20)

Ya, I'm worried. I can't control her behaviours.

(Session 1, Line 40)

Ya, I'm concerned that outside food is too oily and salty for her. Because of work, I've no choice…

(Session 1, Line 105)

I'm having headache with money issue also. You see. I'm experiencing anxiety and that's one of the reasons also.

(Session 2, Line 82)

Annoyed

She always talks about my uncle who has passed away during World War II… Me and my sister are getting very annoyed about her behaviour.

(Session 1, Line 24)

You thought I like to do that? I also don't' like to do that!... Clean up one plate like a century! I get very annoyed by that!

(Session 1, Line 115)

Helpless

I'm getting helpless with her funny behaviours.

(Session 1, Line 20)

Frustrated

Her behaviours really make me feel frustrated.

(Session 2, Line 74)

I felt frustrated with my mom's when she repeatedly waking my dad who was sound asleep.

(Session 4, Line 20)

Fear

I feel afraid… when especially my mother complains of not feeling well.

(Session 2, Line 34)

I have been feeling… scared that something may happen to her…. Actually, I've fear of losing her.

(Session 2, Line 44)

Nervous

I feel nervous… especially when my mother complains of not feeling well.

(Session 2, Line 34)

Panic

Wasn't she alright before I left? Was she in critical condition? I started to be panicky.

(Session 2, Line 44)

Behavioural Symptoms

Shouting

Ya, I even shout at her! Why she always talks about people who already passed away?

(Session 1, Line 28)

Rushing

I quickly rushed back from my office to go to my parents' house to make sure her life not in danger.

(Session 1, Line 76)

Punching

She refused to listen to me last time and I punched her arm to stop her.

(Session 3, Line 95)

Effect of Cognitive Restructuring Technique (CRT) On The Family Caregiver's Anxiety in Caregiving of Demented Person

MSE

MSE is used to assess client throughout the whole counselling sessions. The major improvement and the changes are client's affective state, mood, and insight/ judgement. There are broadly categorized into seven categories consisting of appearance, eye contact, speech, mood, cognition, perception, thoughts, behaviour, insight, and judgment. The subject was seen as presentable and neat in his attire throughout six counselling sessions. During the first session he was seen slightly distracted and tense. These reactions may be due to being

his first session on top of his personal issue related to anxiety in his caregiving for his mother who has dementia. However, his attention and anxious feeling gradually reduced through the sessions. His anxiety was most prominently noticed during the first session in his eye contact and speech. He was able to maintain eye contact when communicating with the researcher but on and off he did look dazed when touching on issues which he was anxious. His spoke softly in low tone of voice which indicated his uneasiness in revealing his vulnerability to an outsider.

However, he became more at ease and relaxed after gaining trust from the second session till termination. In terms of the subject's emotion, his frustration, anger, and worries were reflected accordingly in the transcripts and gradually calmed down towards the end of the sessions. There was improvement seen in the subject's cognition after he was taught cognitive restructuring technique during the 3rd session which helped him to think more logically. When the CRT was applied for the first time, in third session (B3), client's affect was reactive and mood congruent, unlike previous session (B2), she was anxiety. For the mood of the client during B3, it was relieved. Before the application of CRT, client was slightly anxious (B1) and depressed (B2). In terms of insight/ judgement, client's improved from having fair insight and judgements to having good insight and judgements during B3. Later on, for the sessions after B3, client's affective state remained to be reactive and congruent and her insight and judgements remained to be good. In terms of mood, client remained to be euthymic until the session is terminated.

Client was slightly anxious and depressed in the first session, no more anxious but still depressed in the second session. Then, client felt relieved in the third session, and then client remained euthymic for the rest of the sessions. Furthermore, client's thoughts were logical and

did not display any suicide ideation, homicidal ideation, delusion or phobia throughout the sessions. Client's perceptions were also normal and she showed no signs of hallucinations or delusions. Her memory and concentration were normal and showed no impairments (in terms of time, place, person, and self) throughout the sessions. Client also had fair insights and judgements for the first and second sessions, however she improved from the third session onwards. This finding showed that CRT used to client help him on improving his anxiety.

PND

The effect of CRT on the anxiety of family caregiving of the subject was evaluated based on Percentage of Non-Overlapping Data (PND). PND is the ratio of the number of data points at Phase B lower than the single highest data point at Phase A to the total number of data points at Phase B as shown in figure below;

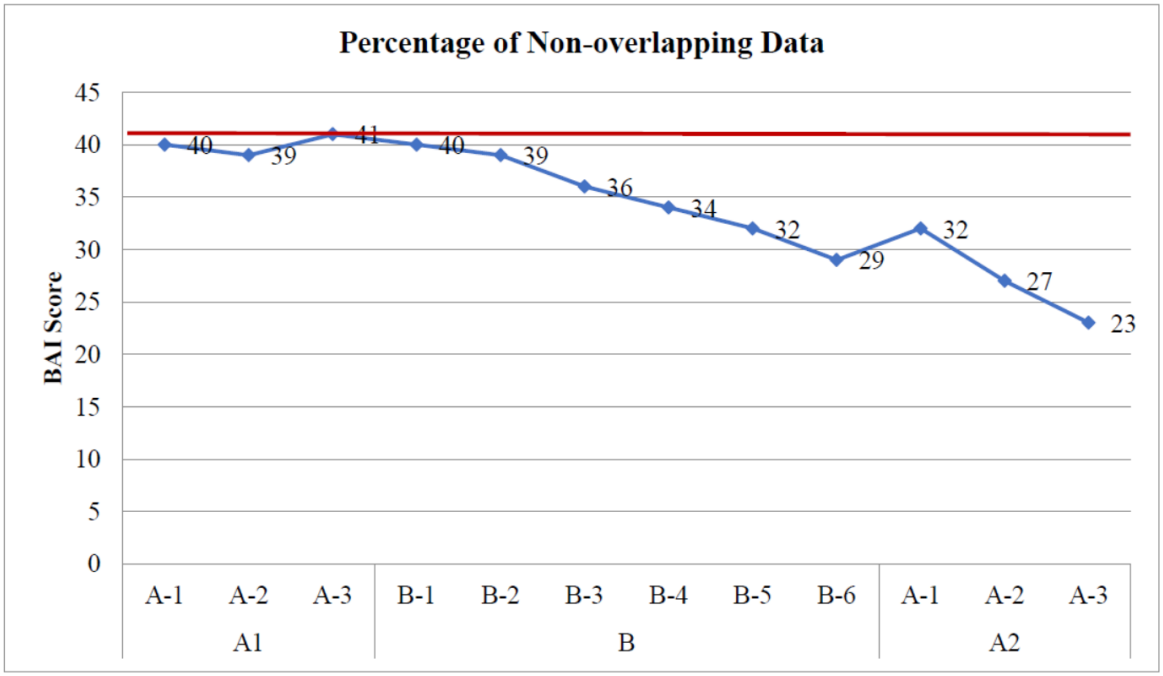

Figure 2: Percentage of N0n-overlapping Data

The effect of CRT on the anxiety of the participant will be represented by the value of PND. The highest score at Phase A1 was 41 and was determined as the highest baseline value pre-intervention. Based on Figure 4.2, there are six data points at Phase B which fall below the maroon horizontal line indicating the highest value at Phase A1. The higher the PND represents the higher index of amount of improvement in the subject. Base on the table of PND value and effect of CRT below, the effect of CRT on the subject's anxiety is effective.

	PND Value	Effect
Overall effect intervention	6/6 x 100% = 100%	Effective

Table 3: PND Value and Effect of CRT

Discussion

The increase in level of anxiety can be explained by client having a clearer understanding towards the items in the questionnaire and able to give her response more accurately (Boynton, 2004). His baseline level of anxiety was assessed at pre-intervention phase and the highest score which was 41 was taken as the baseline score. This score indicated that the subject experienced severe anxiety. However, this score showed a gradual and slight decrease as the subject moved through the counselling sessions. It is noted that the changes in the scores between each session are in the range of 3% to 9% with more significant decrease noted during the last session when the subject competently demonstrated his capacity in changing his distorted thoughts.

The data collected at Phase A indicated a slight up trend prior to the initiation of the first counselling session. It could be due to the subject's anxiety being heightened as he was going to attend his very first counselling session and anticipated the procedures involved in the intervention. As this was the subject's first experience participating in a research, the procedures involved in the intervention could have posed as a threat to him. This is supported by Corey (2017) who cautioned that clients concern surface rather quickly during the initial phase of therapy as they feel discouraged and lack of confidence in coping with the issues in their lives. Therefore, collaborative empiricism should be reinforced during the intervention to ensure the effectiveness of CRT (Clark, 2014). However, a small and gradual decrease in the subject's score was noted after first and second sessions which may indicate that the rapport built between the researcher and the subject has allayed the latter's worry.

The client shared with the researcher generally the issues in his caregiving for his demented mother during the first session. He gave the feedback at the end of the session that his stress in caregiving was reduced after ventilating to the researcher. He was able to open up emotionally during the second session after trust has been established. He was noted to provide more details about his concerns. Therefore, therapeutic relationship between the client and counsellor was the key in the initial session in which the client shared his inner thoughts, beliefs, and emotions regarding the issues he brought to the session.

During the third counselling session, there was a significant improvement in the subject's anxiety level, i.e. a reduction of 7.7% in the post-test score. The client was taught how to identify the negative thoughts as a preparation to progress to the next part of CRT i.e. challenging and modifying the thoughts in the subsequent sessions. Explanation was provided regarding how distorted thought develops unconsciously as the brain constantly interprets the information in the environment. Cognitive therapy explains that what a person's thoughts and emotions about an event may appear 'irrational', the response may be completely rational if looking from the perspective of how he or she perceives and interpret the world (Wills et al., 1997). Therefore, being aware of the rationale of the cognitive distortions made the subject understand his emotion and being able to accept himself.

After the fourth counselling session, the score continued to decrease slightly. The subject was taught how to dispute and modify his distorted thoughts. Cognitive restructuring verbal intervention strategies were used to validate the thoughts and generate alternatives. Client was able to view from two perspectives and experience the good feelings (Perls et al., 1951) when he be the bright, positive self. He felt empowered to make changes in his emotions and behaviours as he had better awareness about his maladaptive thinking styles. As the subject's awareness about his negative automatic thoughts gradually improved, he was able to independently monitor and identify his own thoughts outside the session. He could relate to the researcher during the fifth counselling session about the modification process based on the real life situations as an evaluation of his learning from the previous sessions. The decrease in BAI score after the fifth session indicated the improvement seen in the subject.

The subject expressed that he felt more relaxed and calm during the sixth counselling session. The post-test score obtained after this final invention phase demonstrated the most prominent

decrease. The client's subsequent post-test scores did show a small spike up shortly after the intervention but was followed by gradual decrease later. Overall, the improvement of the subject's anxiety level is gradual and continuous. The intervention applied has worked for him even though it does not totally reduce it. Most importantly these skills can help him master the techniques so that he can apply them after the therapy has ended (Kacskurkin et al., 2015). The findings of this study in terms of the level of anxiety of anxiety are consistent with the past research of Akkerman et al. (2004) that CRT is an effective intervention for family caregiver of person with dementia.

The anxiety symptoms of the subject were categorized into four components, i.e., physiological, cognition, emotion, and behavioural. The subject's anxiety symptoms as a family caregiver are consistent with the findings reported by previous researchers (Rodriguez et al, 2003; Akkerman et al., 2004). Caregiving is a known source of stress to caregivers as they are potentially exposed to severe stress over a prolonged period of duration (Schultz et al., 2004). This is supported by investigation in previous research which found an association between anxiety, poor sleep maintenance, and caregiving (Flaskerud, Carter & Lee, 2000). The subject's maladaptive emotions and behaviours are associated with the negative automatic thoughts which were developed from cognitive distortion (Marquez-Gonzalez et al., 2006). Knapp (2008) explained that if an individual maintains danger-oriented beliefs, anxiety will prevail and predispose him to narrow his attention to perceived threat. In another word, the negative automatic thoughts affect the way an individual feel instead of the situation he is in. The progressive cognitive deterioration and loss of physical functioning of demented patients can be highly stressful for caregivers (Ferrara et al., 2008). The continuous need to care for the patient means that the hours dedicated on caregiving will increase as the disease worsens.

The subject's emotional symptoms included anxiety, annoyance, helplessness, frustration, fear, nervousness, and panic. These emotional responses were induced by the subject's cognitive distortions when experiencing the prolonged and demanding caregiving activities. According to cognitive model (Wills et al., 1997), dysfunctional thoughts contribute to the individuals' maladaptive emotional and behavioural responses. During Phase A1 (Baseline) data collection, the subject consistently scored high on item 'fear of worst happening' in BAI. He expressed that he did not know how to manage his mother's disruptive behaviours. According to Cummings et al. (2002), loss of activities of daily living and behavioural symptoms are the main sources of difficulties in managing demented patients. The is noted in the subject's caregiving activity in which he needs to prepare daily meals, wash dishes, personal hygiene care, and grocery shopping for his mother who has cognitive deficits due to dementia. His disruptive behaviour of waking up his father from sleep triggered his frustration and loss of control. Caregiving has become a perceived threat and contributed to his anxiety.

The subject presented with negative automatic thought of arbitrary interpretation in which he believed that his mother's negative behaviours to her psychological distress of past experience which were not properly managed rather than dementia. According to Polk (2005), caregiver who attributed their relatives' negative behaviours to dementia were able to

cope positively with caregiving. During the intervention phase, the anxiety symptoms of the subject were noticed throughout the six counselling sessions and were recorded in MSE. The subject exhibited symptoms associated with cognition included self-conflict and cognitive distortion. According to Beck's (1976) cognitive theory, cognitive distortion is cognition which accumulates and forms a theme. It is maintained to form negative automatic thoughts which are barely aware by the clients until they are discovered. Beck et al. highlight that therapists do not generally have the idea the validity of a client's automatic thought. Only through the process of collaborative empiricism, the therapist and patient can cooperate to test the client's cognitive processes. The subject claimed that only after learning CRT through the counselling sessions he was aware about his irrational thinking pattern and had the opportunity to learn how to think logically. Obviously, the overall outcome of the intervention demonstrates that CRT has positive effect on the symptoms of anxiety of the subject by a gradual reduction from initial session until termination.

Based on the findings derived from the study, the subject's level and symptoms of anxiety showed a decline after the application of CRT during the counselling sessions. The 100% score of PND also show that the CRT treatment is very effective to address client's anxiety problem. The results of this work are consistent with the findings of previous studies done by Akkerman et al. (2004), Marquez-Gonzalez et al. (2006) and Ghorban Hemati Alamdarloo et al. (2019). The results yielded from BAI pre-test and post-test scores, verbatim transcription, and observation performed during counselling sessions demonstrated positive outcomes after the subject completed three phases of the treatment process. The subject attributed learning how to restructure his thoughts has helped him adopt positive beliefs and generate adaptive emotions and behaviours. The collaboration between the researcher and the subject in the intervention has successfully helped the latter in identification and modification of his distorted thoughts. In CRT, techniques are emphasized rather than creating insight in clients. It aims at teaching people change their irrational beliefs and self-defeating behaviours and guide them to achieve rational and logical attitude (Ghamari et al., 2015). The results of this study indicate that counselling using CRT has managed to reduce the anxiety of family caregiver.

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