

CHAPTER 4

Results and Discussion

Results

The purpose of this study is to investigate the effect of group Cognitive Behavior Therapy Program on depressive symptoms among older women. This chapter consists of two parts. The first reveals the study results, and the second part describes the discussion. The study results are presented in three parts as follows.

Part I: Demographic characteristics of the participants

Part II: The comparison of mean depression scores among older women immediately after completing group CBT program, at one, and three month follow up, with baseline.

Part III: The mean depression scores between older women who received group CBT program, and those received usual care, immediately after completing each treatment, at one and three months follow up, and compare with baseline.

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Part I: Demographic Characteristics of the Participants

Sixty Thai older women who met the inclusion criteria were asked to participate. All of the participants completed all of the intervention sessions. The final sample for analysis included 60 participants, 30 in the experimental group, and 30 in the control group.

In the experimental group, the average age of the participants was old age ($\bar{X}=70.67$ SD = 6.661). All of the participants were Buddhist. The majority of the participants graduated from primary school (70%), while the rest did not (30%). The participants were married 50%, widowed or separated (46.7%). The majority of the participants had enough income (63.3%), had a chronic illness (73.3%), and all of the participants did not have any psychiatric condition, or psychiatric family illness history. For the control group, the average age was 70.4 years ($\bar{X}=70.40$ SD=7.546). The participants had the same pattern of education background; below primary school (53.3%) and primary school graduate (46.7%). With respect to marital status, they were married (56.7%) and widow, or divorced (43.3%). The participants had a chronic illness (56.7%). All of the participants were Buddhist (100%). All of the participants in both the experimental, and the control group, did not have a psychiatric condition, or psychiatry family illness history. The comparative analysis of demographic data and depression score between the experimental group and the control group was done by using Independent t-test, which no statistical difference in demographical characteristics and depression score at a baseline was found. (see Table 4-1)

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Table 4-1

Demographic Variables of the Participants

Demographic Characteristics	Experimental		Control		P-value
	(n= 30)	%	(n= 30)	%	
Age (years)					
60- 69	12	40.0	18	60.0	
70-79	15	50.0	8	26.7	
80 and over	3	10.0	4	13.3	
Range	61- 85		61-85		
Mean (SD) ^a	70.67 (6.66)		70.40 (7.55)		.58
Educational level ^b					.29
Below primary school	9	30.0	16	53.3	
Primary school	21	70.0	14	46.7	
Marital status ^b					.29
Single	1	3.3	0	0.0	
Married	15	50.0	17	56.7	
Widowed/ separated	14	46.7	13	43.3	
Chronic ill ^b					.11
Yes	22	73.3	17	56.7	
No	8	26.7	13	43.3	
Depression score at baseline ^a					.15
Mean (SD)	6.43 (1.67)		6.53(0.97)		
Min/ Max	5/8		5/8		

Note. ^a = t-test. ^b = Chi-square test. * p < .05

Part II: The Mean Depression Scores Among Older Women Immediately After Completing Group CBT Program, at One, and Three Months Follow Up, Compare with Baseline

To mean depression score of older women immediately after completing group CBT program, at one month, and three months follow up in experimental groups compare with baseline. The results indicated statistically significant difference in mean depression score in the experimental group, at least one point of time ($F=40.04$, $p < .05$) (see Table 4-2).

Table 4-2

The comparison of Mean Depression Scores Among Older Women Immediately After Completing Group CBT Program, at One, and Three Months Follow Up, Compare with Baseline

Within subjects	SS	df	MS	F	p-value
Time	240.43	2.23	130.29	40.04	.00*
Intercept	1680.01	1	1680.01	240.90	.00*
Error	202.24	29	6.97		

* $p < .05$

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According to post-hoc comparison of time pairs, in the experimental group, the results indicated that there was a statistically significant decrease in mean depression scores between immediately after completing group CBT program, at one month, and three months follow up, compare with baseline (see Table 4-3).

Table 4-3

Comparisons of Mean Depression Scores Between Each Points of Measurement in the Experimental Group

Time	Depression scores		t	p-value
	Mean	SD		
Baseline	6.43	1.17	-.361	.15
Immediately	2.87	1.20	-15.066	.03*
1 month follow up	2.73	2.27	-9.039	.00*
3 month follow up	2.93	2.50	-8.722	.00*

Note. Independent t-test, * p < .05

Part III: The Comparison of Mean Depression Scores Between Older Women Who Received Group CBT Program, and Those Received Usual Care Immediately After Completing Each Treatment, at One and Three Month Follow-Up, Compare With Baseline

To investigate the effect of group CBT program on depression, two-way repeated Analysis of Variance (ANOVA) was performed in order to compare mean depression scores of Thai older women between the experimental group, and the control group, and also the differences in mean depression scores between points of measurement. Two-way repeated ANOVA was used to compare the difference mean depression scores between the experimental groups and the control group at baseline. Furthermore, the test of between subject effects using Greenhouse-Geisser found a significant interaction effect of time and group. The significant main effect was found, the independent t test was used to determine the location of significant differences of mean scores of depressive symptoms between the experimental, and control group in each points of time. The results indicated statistically significant difference in mean depression score in the experimental group, at least one point of time ($F=45.36, p < .05$) (see Table 4-4).

Table 4-4
Comparison of Mean Depression Score Between Older Women Who Received Group CBT Program, and Those Who Received Usual Care Immediately After Completing Each Treatment, at 1 and 3 Month Follow Up Compare with Baseline

Group	Mean (SD)				F	p-value
	Baseline	After completing the program immediately	at 1 st month follow up	at 3 rd month follow up		
Experimental (n= 30)	6.43 (1.17)	2.87 (1.20)	2.73 (2.27)	2.93 (2.50)	45.36	.00*
Control (n= 30)	6.53 (.97)	6.97 (.89)	6.97 (1.19)	7.10 (.76)		

* $p < .05$

In table 4-4, the result of two-way repeated ANOVA indicated that there were statistically significant differences in mean depression scores between the experimental group, and the control group ($F=122.20$, $p < .05$). The analysis also illustrated the statistically significant differences in mean depression scores between four points of measurements (baseline, immediately, one month, and three month follow up ($F=45.36$, $p < .05$), and the statistically significant interaction effect between groups and points of measurement ($F=1392.42$, $p < .05$). Furthermore, the test of between subject effects using Greenhouse-Geisser found a significant interaction effect of time and group. Therefore, the significant main effect was found, the independent t test was used to determine the location of significant differences of mean depression scores between the experimental, and control group, in each points of time (Table 4-5).

Table 4-5

Comparison of Mean Depression Scores Between Each Points of Measurement in the Control and Experimental Groups

Source	SS	df	MS	F	p-value
Within subjects					
Time	109.73	2.37	46.30	26.73	.00*
Time x group	186.18	2.37	78.55	45.36	.00*
Between subjects					
Intercept	6784.07	1	6784.07	1392.42	.00*
Group	595.350	1	595.350	122.20	.00*
Error	282.583	58	4.872		

* $p < .05$

According to post-hoc comparison of treatment pairs, the results indicated that there was a statistically significant decrease in mean depression scores at baseline, immediately after completing each treatment, at 1 month, and 3 months follow-up over time, between in the experimental group, and the control group by using the independent t-test ($p < .05$) (see Table 4-6).

Table 4-6

Post Hoc Comparison of Mean Depression Scores Between Group CBT Program, and Usual Care at Each Point of Measurement

Group	Mean depression scores (SD)									
	Baseline	Immediately after completing the program	1 month follow-up (3)	3 month follow-up (4)	1 vs 2	1 vs 3	1 vs 4	2 vs 3	2 vs 4	3 vs 4
CBT program (n= 30)	6.43 (1.17)	2.87 (1.20)	2.73 (2.27)	2.93 (2.50)	.00*	.00*	.00*	1.00	1.00	1.00
Usual care (n= 30)	6.53 (.97)	6.97 (.89)	6.97 (1.19)	7.10 (.76)						

Note. Post Hoc for One-Way Repeated Measure ANOVA, * $p < .05$

According to One-Way Repeated Measure, ANOVA was used to determine the location of significant differences of mean depression scores between group CBT program, and usual care in each point of time.

The results indicated that there was a statistically significant decrease in mean depression scores at baseline, immediately after completing group CBT program, 1 month follow up, and 3 months follow-up. Mean depression scores immediately after completing group CBT program were lower than at the 3 month follow-up. At the 1 month follow up it was lower than after completing the Thai group CBT intervention program, and at 3 month follow up.

For the usual care, mean depression scores at baseline was lower than mean depression scores immediately after completing the program, at 1 month follow-up, and 3 month follow-up. Mean depression scores immediately after completing the program was lower than at 3 month follow-up.

Figure 4.1 shows change over time in mean depression scores of the experimental group, and the control group. In the control group, mean depression scores slightly increased from baseline to immediately after completing standard care, at 1 month follow up, and slightly increased at 3 months follow up, while the changes of mean depression scores in the experimental group seemed to decrease over time, particularly from baseline to immediately after completing group CBT program, showing a sharp decrease, and a slight decrease at ,1 and 3 months follow up. However, mean depression scores of the experimental group were lower than those of the control group over time.

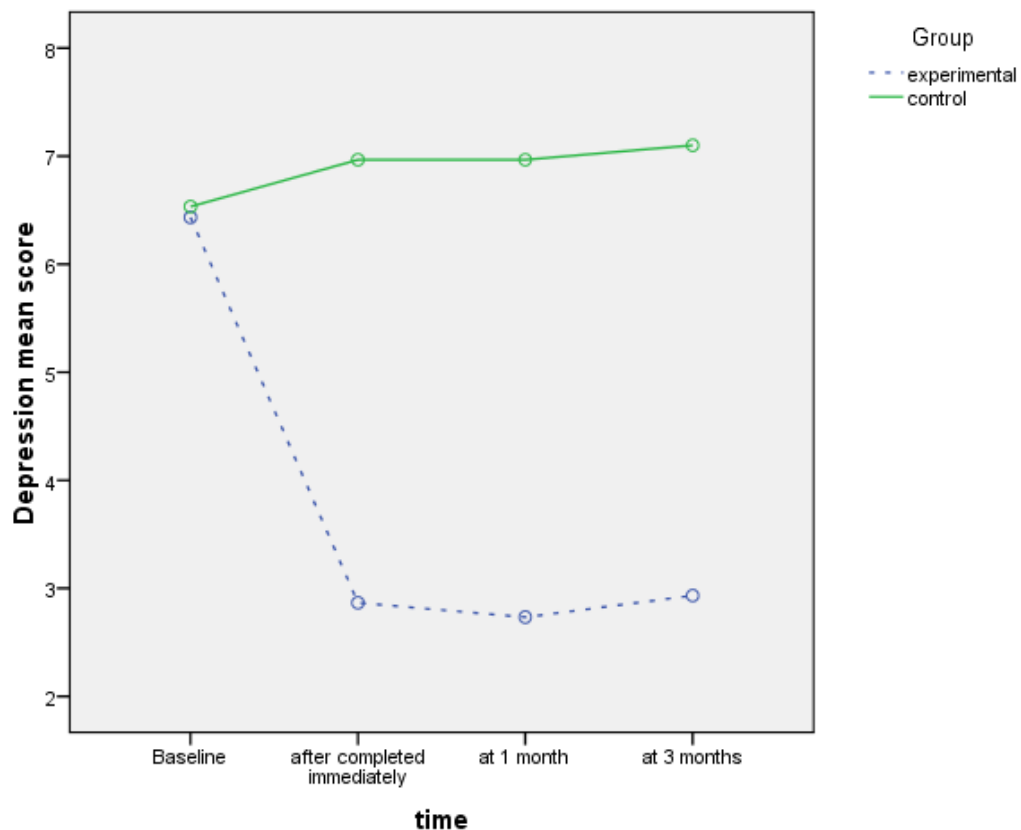


Figure 4-1. Shows comparison mean depression scores between the experimental group and the control group

Discussion

The study results of the effect of group CBT program on depressive symptoms among older women are discussed according to the research hypothesis, as older women with mildly depressive symptoms receiving group CBT program, was a statistically significant decrease in mean depression scores between immediately after completing group CBT program, at 1 month, and 3 months follow up, when compared with baseline. When compared mean depression scores with control group, the result revealed that in the experimental group they have a mean depression score lower than those receiving usual care over time. The results are discussed as follow.

The components of group CBT program in this study, where the researcher followed the components of Beck (2011), that prove by many studies the effectiveness of reducing depression (Imel et al., 2008; Hofmann et al., 2012; Pincus & Sorensen, 2016). For example, the program provides psychoeducation for the participants to understand their depression, and the reason for using CBT based on a cognitive model for the component of CBT in the first, and second session (Gonzalez-Pinto et al., 2004). The strength of psychoeducation is more informative about depression and treatment, and content is mainly aimed at improving adherence to treatment that can decrease depressive symptoms (Beck, 2011).

The participants in this study showed that they understood the cause of their depression after learning about case formulation, for example “I really understand the cause of suffering happens from my thoughts, because I wrote it by myself in my case formulation chart”, “I saw the interrelation among my thoughts, feelings, behavior, and body change, after I wrote up my case formulation in the manual”, “we have the same case formulation in hand, so we can work together to deal with my problems” meanwhile case formulation helps both researcher, and the participants to understand causes of the problems, it describes and explains participants’ presentations in ways that inform intervention (Beck, 2011). Furthermore, CBT formulation allows for a focus on the “here and now” which is considered to be particularly helpful to the researcher, as well as in forming appropriate interventions (Beck, 2011; Sturme & McMurrin, 2011). Case formulation is a process whereby the researcher and participants work collaboratively to first describe, and then explain the issues participants present in the session, using

cognitive, and behavior terms. Its primary function is to guide therapy in order to relieve participants' emotional distress, strengthening therapeutic alliance (Beck, 2011; Thew & Krohnert, 2015), and enhancing treatment adherence (Mumma & Fluck, 2016). In short, case formulation is a tool for improving CBT practice by helping describe, and explain participants' presentations, in ways that are theoretically informed, coherent, meaningful and lead to an effective intervention (Kuyken et al., 2008; Thew & Krohnert, 2015).

CBT techniques consist of cognitive techniques, behavior techniques and additional techniques for teaching and helping them to identify, evaluate, and respond to NATs, led by the researcher, can help participants focus on a specific problems, identify their dysfunctional thoughts and NATs, evaluate the validity of their thoughts (through examining the evidence that seem to support its accuracy, and the evidence that seems to contradict it), devise a plan of action, and be truly interested in collaborative empiricism, that is to help them determine the accuracy, and utility, of their ideas via a careful review of data through questioning, and also guiding them in evaluating the validity and functionality of their NATs (Beck, 2011). The researcher uses cognitive techniques, such as Socratic questioning, downward arrow technique, guided discovery, and dysfunctional thought recording; behavior techniques such as an activities daily record, mastery and pleasure activities record, and additional techniques, such as relaxation, and also role playing all of these techniques used by the researcher. Accordingly, it can reveal a successful of group CBT program, by the expression of participants that they can identify their thoughts and NATs, evaluate the validity of their thoughts, for example, "Activities of daily recording help me to consider the waste of time each day that I spend my time thinking about bad event sequences, from my homework", "After I joined your programs 6 sessions, I became aware of my thoughts, and said to myself "don't hastily belief it, I must test it first", "I have short questions to remind myself to use, from your suggestions, that can help me before going to bed: Is it true?, Don't belief it, it should be tested first?", "How I think in different or alternative ways for the situation?" or "How useful is it, if I repeatedly think in bad ways?", "After I have finished my homework assignment I realize that my dysfunctional thoughts minimize my ability, they lower my reality about what I can do , and it makes me felt sad", "I test my thoughts from some activities, and I found that everything come from my thoughts, and it's all in my head".

Homework assignment is another successful key of CBT, to reduce depression, being more co-operative to do homework can predict the positive outcome (Beck, 2011). Most of the participants in this study cooperated, by completing their homework assignment, and they appreciated the usefulness of homework. Example sentences from them are “when I do my homework, I have a chance to consider my thoughts, and reconsider them again, before I believe them”, “Homework assignments help me to be aware of my thoughts, because they can hurt me”, and “I learned a lot from my homework and your suggestions”. Homework assignments can support CBT; homework assignments can reduce depression, and leads to better outcomes when compared to CBT without homework (Kazantzis et al., 2010). In addition, the study of integrating homework assignments based on culture, working within eastern countries, such as Chinese patients, who found that introducing homework at the very beginning of the session as a part of building the relationship, and socialization, emphasize the utility of homework, and allowed family members to help them to improve and reinforce homework adherence, were appropriated with older Chinese persons. Using a case study example, illustrated how some of our culturally specific beliefs can influence the process of integrating homework assignments into therapy sessions (Foo & Kazantzis, 2007). Harris and Hiskey (2015) found in their study that using writing notes, or homework worksheet was effective for participants compliant to home work, and that was evident in this study. This study has done similarly, to these two studies.

The result of this study congruent with those of other studies that used the CBT on depression among older persons in the community, but almost all of the previous studies mention MDD, by conducting a systematic review, or meta-analysis for the evaluation of the effectiveness of CBT as the treatment for depressed older, or comparison the effective of CBT. Only one study is found using the RCT design to evaluate the effect of CBT, compared with TAU, for mild to moderate depressed older persons found that CBT shown to be effective treatment for mild to moderate late life depression, and has a benefit as a treatment alternative for older persons who cannot, or will not tolerate physical treatment approaches for depression (Laidlaw et al., 2008). Satisfaction of the result of this study consisted with APA, which provide older people’ with health and aged related change in mental health, and mental process that mention cognitive changes, which are associated with mental processes, such as sensation, perception, memory, intelligence, language,

thought, and problem-solving, that occur among aging adults. Because it may take older adults more time to encode, store, and retrieve information, the rate at which new information is learned can be slower among aging adults, and older adults often have a greater need for repetition of new information. Although it may take older adults longer to input and retrieve new information, daily occupational and social functioning among those over age 65, is not impaired. Short-term memory shows substantial changes with age, while long-term memory shows less age-related decline. Wisdom and creativity often continue to the very end of life (APA, 2016). Similarly with the result of a study that showed decreasing of mean depression scores after completing Cognitive-mindfulness practice program on depression among Thai elderly (Kitsumbun et al., 2009).

From literature reviews, it was found that traditional practice were ineffective at changing behavior, so active learning may be the most effective way to change behavior, particularly for new, or complex skills, behavior rehearsal, and robust sessions as used in CBT for depression (Beidas et al., 2014). This study differs from previous studies that used CBT for older, and adults in Thailand, were 3 loops of three steps of CBT, and robust sessions. The researcher provided group CBT program, and facilitated the participants learning to share with various methods to identify, evaluate, and respond NATs in 3 loops, throughout session 2 to 10, and robust sessions including three steps of CBT, and added more behavior rehearsal in session 11 and 12. This can help the older women to clearly understand how to change their thoughts that bring them to depression, and depressive symptoms, and were decreased. In Thailand, literature reviewed between 2009-2015 were not found where any study used CBT for depressive symptom among older persons, but found studies that used cognitive-mindfulness practice programs for elderly Thai women (based on Beck's cognitive theory) that provided 11 sessions, that started cognitive therapy phases in sessions 6 to 11 (only one loop of 3 steps of CBT) (Kitsumbun et al., 2009). Another 4 studies in Thailand were studies in adults, firstly, the study of CBT for the treatment of MDD: workforce development, and service evaluation in Thailand found that CBT is beneficial for Thai major depressed patients not responding to antidepressant therapy. The participants aged between 18-60 years old received weekly, or biweekly sessions, with a duration of between 8-16 sessions, and not introducing robust sessions (Srisuratpanont, Pityaratstian, Kittirattanapaiboon, & Charatsigha, 2009). The second was the study of CBT program on depression of Thai patients aged between 20-59 years

old with MDD, found that the researcher provided 8 sessions, with only 1 loop of CBT, and did not provide robust sessions (Mokekshaw, 2011). The third was the study of Cognitive Behavior Bibliotherapy self- help manual, with 8 modules, found that it can reduce psychological distress in Thai people age between 18-60 years old, with moderate depression. The researchers provided only 2 modules with CBT components, but not present were any robust sessions (Songprakul & McCann, 2012). The last study was the study of a CBT based guided self- help manual, in decreasing expressed emotion for Thai aged 18-60 years, who are caregivers of adults receiving outpatient department treatment for moderate depression. The manual was based on self-help, and CBT principles and contained 8 modules, that provide only 2 modules that used CBT components, and not present were any robust session (McCann, Songprakun, & Stephenson, 2015).

In addition, different from other groups, CBT in this study had 12 sessions, every other day, average of 50 minutes for each session, this was appropriate to older persons whose Short-term memory shows substantial changes with age, and can participate in not to long sessions (APA, 2016; Niewmsma et al., 2012). Congruent with the study of Pasterfield et al. (2014) who state that providing adapting behavior activation for older adults with depression by select activities appropriate to their physical function, or physical health problem, smaller steps at each session, and smaller homework assignments, and age appropriate examples. Moreover, the researcher provided the transportation cost for participants to participate in the program at SDHs (that was stated in consent form), and found that it was appropriate with the participants who are older women, because they need to participate, but they had an obstacle of transportation, to join with group CBT program by themselves. Thus no participant dropped out from this study, and all of them completed the program, a reason participants learnt how to deal with their depression in effective ways, was shown as the result of this study.

In cultural concern, the researcher provided behavior activities for listening to the monk, who taught them how to think on reality, here and now, and how to stop distortion of thought (that lead to and continue their depressive symptoms) by use of teaching words from Buddha. This activity helped older women evaluate the validity of their thoughts, modify and respond to their thoughts, from the activity that is familiar with Thai older women's life pattern. Congruence, with the study of addressing spirituality in CBT, the

researchers mention of spirituality in CBT, a requirement that mental health care providers need to address the matters of religion and belief, because the world's major religions all have models of the human psyche, and a recognition of the interaction between mind and spirit (Waller, Trepka, Collerton, & Hawkinh, 2010). In this study, the researcher provided the religion activity for offering dedication for Buddhist monks that represent the example of behavior techniques, and are familiar with Thai culture. After finishing the activity the participants felt better, and can connect interrelation among the cognitive, behavior, emotion, and physical in this cognitive model. In addition, the result of a meta-analysis study in behavior techniques for depression found that behavior techniques were an effective treatment for depression (Ekers et al., 2008; Ekers et al., 2014).

The result of this study confirmed that group CBT program can reduce depressive symptoms and assumes that group CBT program for developing depressive disorder programs for older persons are undertaken in the future. Consistency with Whyte and Rovner (2006) studied about depression in late life in USA, the researchers reviewed prevention research, with a particular focus on its application to depression in late life, mentions that most research has focused on treatment, not prevention, and concluded that recent and ongoing clinical trials of interventions for depression in the older persons should be shifting the paradigm from treatment to prevention.

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