CHAPTER 4

RESULTS AND DISCUSSION

This chapter consists of two parts. The first part reveals the study results and the second part describes the discussion.

Results

The study results are presented in two parts. The first part is a description of demographic characteristics of the sample and the second part reveals the findings of depression of the sample.

Demographic Characteristics of the Sample

Sixty Thai elderly women who met the inclusion criteria were asked to participate. Six participants dropped out of this study: Three from the experimental group dropped out as they did not complete all intervention sessions due to sickness and, three from the control group dropped out due to traveling and sickness. The final sample for analysis included 54 participants, 27 in the experimental group and 27 in the control group.

In the experimental group, the average age of the participants was 69.81 years (SD= 6.62). The majority of the participants were Buddhist (92.6%), widowed or separated (51.9 %), and had finished primary school (88.9%). For the control group, the average age was 68.70 years (SD= 5.48). The majority of the participants

were widowed or separated (44.4 %), and had finished primary school (85.2 %). All participants were Buddhist (100%). The comparison analysis of demographic data between the experimental group and the control group was done by using t-test, Chi-square test, and Fisher's exact test which no statistical difference in demographical characteristics was found (see Table 2).

Table 2

Demographic variables of the control and experimental groups

Demographic characteristics	Mean depression score (SD) Experimental group (n= 27)		Control group (n= 27)		statistic test value	p-value
	n	%	n	%		
Age (year) M (SD)	69.81(6.62)		68.70(5.48)		.672[t]	.51
60-69	16	59.3	18	66.7		
70-80	11	40.7	9	33.3		
Marital status					.527[a]	.768
Single	1	3.7	2	7.4		
Married	12	44.4	13	48.2		
Widowed/Separated	14	51.9	12	44.4		
Educational level					2.221[a]	.528
Primary school	24	88.9	23	85.2		
Secondary school	2	7.4	3	11.1		
Diploma	-	-	1	3.7		
Bachelor degree	1	3.7	-	-		
Religion					2.077[b]	.491
Buddhism	25	92.6	27	100.0		
Christian	2	7.4	-	-		

Note. [t] = t-test. [a] = Chi-square test. [b] = Fisher's exact test.

The Comparison of Depression Between Groups and Points of Measurement

To investigate the effect of the Cognitive-Mindfulness Practice Program on depression, two-way mixed-design Analysis of Variance (ANOVA) was performed in order to compare depression scores of Thai elderly women between the experimental group and the control group and also the differences in depression scores between points of measurement. Prior to conducting two-way mixed-design Analysis of Variance (ANOVA), the assumptions of ANOVA were tested and found no violated assumptions, the distribution of depression scores in each groups was normal and had equal variance.

In table 3, the results of two-way mixed-design Analysis of Variance (ANOVA) indicated that there were statistically significant differences in depression mean scores between the experimental group and the control group ($F = 4.966$, $p<.05$). The analysis also illustrated the statistically significant differences in depression mean scores between three points of measurements (baseline, one month, and four months ($F = 24.139$, $p<.001$) and the statistically significant interaction effect between groups and points of measurements ($F = 38.67$, $p<.001$).

Figure 5 shows change over time in depression scores of the experimental group and the control group. In the control group, the depression scores slightly increased from baseline to one month and slightly decreased in four months while the changes of depression scores in the experimental group seem to decrease over time, particularly from baseline to one month. Moreover, the figure also showed the cross line at baseline, this confirmed that there was an interaction effect between groups and points of measurements. According to the interaction effect, the comparison analysis

was performed to compare mean differences of depression scores between two groups (the experimental group and the control group) at each point of measurement.

Table 3

The difference in depression scores between groups and points of measurement

Source of variation	SS	df	MS	F	p-value
Time	831.444	2	415.722	24.139	.000***
- baseline					
- one month					
- four months					
Time x group	1332.111	2	666.056	38.674	.000***
Error	1791.111	104	17.222		
Group	304.222	1	304.222	4.966	.030*
- experimental					
- control					
Error	3185.556	52	61.261		

Note. ***p<.001. *p<.05.

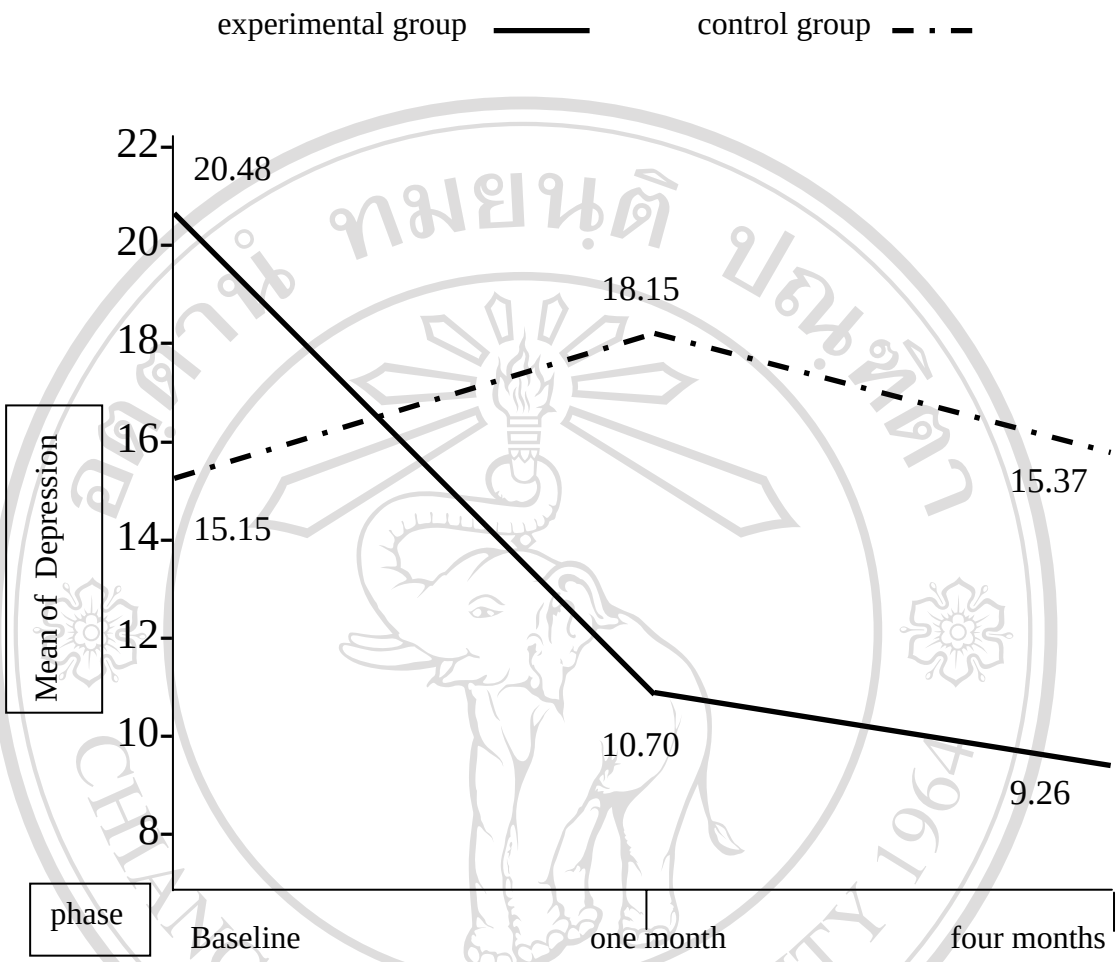

Figure 5. Change over time in depression scores of the experimental group and the control group.

The Comparison of Depression Scores Between the Control and Experimental Groups at Each Points of Measurement

Independent t-test was used to compare depression scores of Thai elderly women between those participating in Cognitive-Mindfulness Practice Program and those receiving usual care at baseline. The results indicated a statistically significant difference in depression scores between the experimental group and the control group

at baseline (t = 3.34, p<.05). Due to a statistically significant difference of depression scores at baseline, Analysis of Covariance (ANCOVA) with pretest as covariate was used to analyze mean differences in depression scores at one month and four months after receiving the program. Prior to conducting ANCOVA, the assumptions of ANCOVA were tested. The Kolmogorov-Smirnov test indicated that the data from both groups were normally distributed and the Levene's test showed homogeneity of variance of depression scores. There was linearity of the dependent variables and the covariate. These results implied no violated assumptions of ANCOVA.

The result from ANCOVA analysis indicated that after controlling depression scores at baseline, there was a statistically significant difference in depression scores between the experimental group and the control group at one month (F=39.71, p<.001), and at four months (F=29.04, p<.001) after receiving the program (see table 4).

Table 4

Comparison of depression scores between the control and experimental groups at each points of measurement

Time	Mean depression score (SD)		statistic test value	p-value
	Experimental group (n= 27)	Control group (n= 27)		
Baseline	20.48(6.26)	15.15(5.45)	3.34^{t}	.002*
one month	10.70(5.26)	18.15(6.09)	39.71^{r}	.000***
four months	9.26(5.09)	15.37(5.64)	29.04^{r}	.000***

Note. ^{t} = Independent t-test. ^{r} = ANCOVA. ***p<.001. *p <.05.

The Comparison of Depression Scores Among Points of Measurements in The Control and Experimental Groups

To compare depression scores of Thai elderly women between baseline, one month, and four months in the control and experimental groups, one-way repeated measures ANOVA was used. Prior to conducting the ANOVA, the assumptions of the ANOVA were tested. Mauchly's test showed homogeneity of variance of depression scores (sphericity). These results implied no violated assumptions of ANOVA.

The results revealed that there were significant changes in depression scores at baseline, one month, and four months in both groups. The depression scores in the experimental groups significantly decreased over time ($F= 60.38$, $p <.001$). In the control group there was a slight change in depression scores over time ($F= 4.24$, $p<.05$) (see table 5).

Table 5

Comparison of depression scores between each points of measurement in the control and experimental groups

Source of variation	SS	df	MS	F	p-value
Experimental	2012.67	2	1006.33	60.38	.000***
Control	150.89	2	75.44	4.24	.02*

Note. ***p<.001. *p<.05.

According to post-hoc comparison of treatment pairs, in the experimental group, the results indicated that there was a statistically significant decrease in depression mean scores between at baseline and one month, and between at baseline and four months ($p<.001$). In the control group, the results indicated that there was a statistically significant increase in depression mean scores between at baseline and one month ($p<.05$) (see table 6).

Table 6

Pairwise comparisons of depression scores between each points of measurement in the control and experimental groups

Group	Phase I and J	Mean Difference (I-J)	SD	p-value
Experimental	1 and 2	9.778	1.258	.000***
	1 and 3	11.222	1.244	.000***
	2 and 3	1.444	.757	.203
Control	1 and 2	-3.000	1.085	.031*
	1 and 3	-.222	1.135	1.000
	2 and 3	2.778	1.219	.093

Note. ***p<.001. *p<.05. Phase 1 = baseline. Phase 2 = one month. Phase 3 = four months.

Discussion

The purpose of this study was to examine the effect of Cognitive-Mindfulness Practice Program on depression in elderly Thai women with mild to moderate depression. The results suggest that Cognitive-Mindfulness Practice Program may contribute to a change in the depression scores as measured by the BDI-IA. The experimental group had a highly significant statistical reduction of depression scores at one month ($p < .001$) and at four months ($p < .05$) after entering the program. When comparing depression scores between the experimental group and the control group, the experimental group had a greater significant decrease in depression scores at one month ($p < .001$) and at four months ($p < .05$) after entering the program than those in the control group. Post-hoc comparison of treatment pairs indicated that the experimental group showed greater improvement than the control group.

With the main purpose to investigate the effect of a Cognitive-Mindfulness Practice Program as a nursing intervention on depression in elderly Thai women with mild to moderate depression, the findings from the analysis of covariance confirm the beneficial effect of the intervention program since it promoted a significant change in depression scores as mentioned earlier. On the basis of the conceptual framework used in this study, the results proved that elderly Thai women with mild to moderate depression who received the program reduced their levels of depression. The program was composed of mindfulness meditation based on the Four Foundations of Mindfulness and cognitive therapy and designed to improve individuals' ability to be aware of body, feelings, mind and mind-objects, to consciously identify automatic

negative thoughts and their problems and to develop alternative thinking patterns and problem solving. The therapy was active, structured and time-limited. Every session was organized in a structured setup in collaboration with the participants. The researcher began treatment by establishing rapport with participants and educating participants about depression. The researcher explained the principles of mindfulness and cognitive therapy, discussed strategies that would be used in the groups and explained role expectations of group leaders and members. Helping participants understand the cognitive model of depression was particularly important in strengthening the treatment rationale and subsequent compliance. Whenever a new technique was introduced, the researcher began by presenting the rationale for that particular technique. These ways could enhance the spirit of collaboration which was very useful for treating participants with depression. Beck (1979) called this collaborative empiricism, used to characterize the nature of the therapist-client relationship in cognitive therapy. The therapist was active and directive, and facilitated a rational approach to thinking with regard to the participants' current life circumstances, using the principles of logic and the scientific method. All of the participants' thoughts and assumptions were treated as hypotheses which were tested to verify their accuracy.

According to the observations from the researcher and the research assistant, the feedback from the participants and the change of depression scores, all participants cooperated well in this program with high attention and they practiced regularly, which were very useful factors for enhancing the effectiveness of the program. Similar to the study of Walker and Clarke (2001) who studied the efficacy of Cognitive Behavioral Therapy comparing older adults with younger adults in two

inner city mental health teams in terms of range of referrals, outcomes, attendance rates and length of time in therapy. The results explained that there were no differences in therapy outcomes apart from home adjustment measures where older adults showed greater improvement whereas younger adults showed significantly higher rates of non-attendance and had higher dropout rates (p=0.014). This is an interesting point as it indicates that older adults paid more attention in cooperating with the treatment and saw the treatment as very helpful to them.

After finishing the program, the researcher found that mindfulness practice was really helpful for the participants to be aware and detect their automatic negative thoughts and their feelings and also their problems. The increased mindfulness of participants to detect their automatic negative thoughts from the program was demonstrated by the qualitative data obtained during group discussion. The open ended question, beginning with “What is going through your mind right now?”

Before entering the program, all participants were unaware of their thoughts and their feelings and also their problems. They could not tell exactly what went through their mind and they did not know that they had depression. This is congruent with the literature as the elderly with depression are less likely than younger patients to report feeling sad or depressed (Moutier et al., 2003). This finding also supports the research of Koder et al. (1996) who reported that the elderly failed to acknowledge their depressive symptoms and automatic negative thoughts. After entering the program, all participants in this investigation were fully aware and could outwardly express and discuss in a group their automatic negative thoughts, and feelings as well as their problems. Bush (2004) emphasized that mindfulness training was an important way of directly altering moods and emotions which powerfully

influence the way elderly think. According to Beck (1967), automatic negative thoughts cause misinterpretation which lead to these negative views of self, their experiences and their future. Identifying and responding to negative thoughts are very important in the CT process (Beck et al., 1979). Most people are unaware that their automatic negative thoughts precede unpleasant feelings and behaviors, leading to depression (Beck & Rush, 1995, Beck, 1995). With mindfulness training, the participants increased their potential to track their automatic thoughts which occur spontaneously, very rapidly, and represented an immediate interpretation of a situation. After the training, participants thought to identify, monitor and ultimately challenge negative cognitions about themselves and their situations and then develop more adaptive and flexible cognitions instead.

The whole process of mindfulness is a way of coming back into the present, of standing in the here and now without slipping away, without getting swept away by the tides of distracting thoughts. Mindfulness exercises a powerful grounding function, it anchors the mind securely in the present, so it does not float away into the past or future with ones' memories, depression, fears, and hopes. Mindfulness facilitates the achievement of both serenity and insight. It can lead to either deep concentration or wisdom (Bhikkhu Bodhi, 1999) and the Lord Buddha claims that mindfulness is the only path to purification and freedom from suffering (Pra Rajaprommajarn, 2004). As Gunaratana Mahathera (2007) indicates, the characteristic of mindfulness is that mindfulness is mirror-thought, it reflects only what is presently happening and in exactly the way it is happening. There are no biases and it is non-judgmental in observation. By becoming more mindful in our daily activities one can become more aware of what is happening in that moment. Awareness fosters

acceptance, which allows one to understand things as they really are (Namto, 1989). Thus, the Cognitive-Mindfulness Practice Program is able to develop participants' awareness of unwanted thoughts, feelings and body sensations, so that participants no longer avoid them or react to them in automatic way but rather respond to them in an intentional, mindful and skillful manner.

Once the mindfulness ability of the participants increased they were ready to focus on using their minds to apply cognitive therapy approaches for solutions to their problems. The CT model, automatic negative thought and how thoughts, moods, and behaviors are all connected to each other were explained and given the examples in the group by using flipchart. The participants could tell and give examples from their experiences. Then, the researcher conducted group discussion to guide the participants to examine the evidence of their thoughts, identify cognitive distortions and generate alternatives. In this session, cognitive distortions were explained and given the examples in the group by using flipchart. Results from group discussion showed that the participants could identify their cognitive distortions and give the examples from their experiences such as all or nothing thinking (I can't be happy unless I have my children around me, I can't enjoy things.), catastrophizing (I'll be so sad, I won't be able to function at all.), emotional reasoning (I know I do a lot of things at home for my family, but I still feel like I'm a failure.), overgeneralization (Because I am getting older, everyone hate me.) and 'should' and 'must' statements (It's dreadful that I made a mistake., I must do my best). These results are similar to Thompson (1996) who concluded that cognitive distortions patterns common in the elderly were as all or nothing thinking, emotional reasoning, overgeneralization and 'should' and 'must' statements.

In the final phase of the program the focus was on the reinforcement and practice of skills learned and on a smooth termination of treatment. The researcher reminded the participants that the initial goal of the program was to teach them strategies to manage their own problems throughout a lifetime. This reminder also encouraged the incorporation of the techniques learned and increased socialization among members of the group.

At typical CT protocol appropriate for the elderly with depression should range between 16 to 20 sessions over a 3-month period and another 3 to 4 month period and take time at least 4 to 16 sessions for the individual to identify automatic thought processes (Thompson, 1996; Thomson et al., 2001). Whereas Cognitive-Mindfulness Practice Program as reported in this pilot investigation consisted of 11 sessions, which occurred daily for the first week and then 2 days a week for the next 3 weeks. Only 2 sessions were allowed for identifying automatic thoughts. Mindfulness practice protocol used in this investigation appears to have improved the depression scores at 1 month and at 4 months. Participants reported an increased awareness regarding their negative automatic thoughts and their feelings in a shorter period than identified in the literature (Thompson, 1996; Thomson et al., 2001). It is hypothesized that mindfulness practice not only increases awareness in the elderly to identify their negative automatic thoughts and their feelings but also decrease duration of time in CT process. Although this program was a short course training, the results of this study shown that the participants in the experimental group had highly significant statistical reduction of depression scores at one month ($p < .001$) and at four months follow-up ($p < .05$) after entering the program. The increase awareness in the elderly to identify their negative automatic thoughts were very useful and high impact for

changing their automatic thought, reducing negative cognitions and finally leading to change in depressive symptoms. Similarly, Kwon and Oei (2003) examined the casual relationships among changes in automatic thoughts, dysfunctional attitudes, and depressive symptoms in a 12-week group cognitive behavioral therapy program for depression. The results indicated that the program reduces negative cognitions. Changes in autonomic thoughts and dysfunctional attitudes lead to changes in depressive symptoms; and autonomic thoughts play a mediating role between dysfunctional attitudes and depression.

According to the results from the follow up at four months, the participants in the experimental group still had highly significant statistical reduction of depression scores after entering the program. Cognitive-Mindfulness Practice Program was not only effective on depression after entering the program immediately but also maintained the result for at least four months. The program may prevent depression in the elderly. Similar to the study of Teasdale et al. (2000) who evaluated the effectiveness of mindfulness-based cognitive therapy (MBCT), a group intervention designed to train recovered relapsed depressed patients to disengage from dysphoria-activated depressogenic thinking that may mediate recurrent major depression. The results indicated that MBCT reduced relapse rates in patients with three or more previous episodes of depression of major depression.

The other gratifying outcome of this study is change over time in depression scores of the experimental group and the control group. In the control group, the depression scores slightly increased from baseline to one month and slightly decreased in four months while the changes of depression scores in the experimental group seem to decrease over time, particularly from baseline to one

month. This reflects the fact that the control group who received usual care may encounter with the continuum of depressive symptoms from mild states to moderate and severe states (Cassano & Fava, 2002).

In conclusion, the findings of this study suggest that Cognitive-Mindfulness Practice Program appears to be an effective nursing intervention. Potentially this low cost, low risk, and culturally appropriate intervention may be an effective treatment option for elderly Thai women with mild to moderate depression to prevent of severe depression in the elderly, and maintain good mental health.

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