CHAPTER 3

METHODOLOGY

This chapter presents a description of research design, population and sample, research setting, research instruments, human rights protection, data collection procedures, and data analysis.

Research Design

A two group, pretest-posttest control group, experimental design was used to examine the effect of Cognitive-Mindfulness Practice Program on Depression in Thai Elderly Women.

E	O1	$X_1, X_2 \ldots X_{11}$	O_2	O_3
C	O_1		O_2	O_3

E = Experimental group

C = Control group

R = Randomization

O_1 = Measurement of depression at baseline

$X_1, X_2 \ldots X_{11}$ = Cognitive-Mindfulness Practice Program 11 sessions

O_2 = Measurement of depression at 1 month

O_3 = Measurement of depression at 4 months

Variables: The independent variable was the cognitive-mindfulness Practice Program. Dependent variable was depression

Population and Sample

Population

The eligible population of this study were Thai women, with mild or moderate levels of depression, aged 60 to 80 years and were residents of Chiang Mai municipality, Thailand.

Sample

The sample of the study included the elderly women who met the following inclusion criteria; a) being able to read, write and speak the Thai language; b) age 60 to 80 years; c) having a score of 10 to 29 on the Beck Depression Inventory (BDI-IA); and d) having a score of 26 or greater on The Mini-Mental State Exam.

Exclusion criteria; a) having a previous psychiatric history; b) undergoing current treatment for depression or other psychiatric diagnosis; c) being terminally ill; and d) having suicidal ideas.

Discontinuation criteria; a) having encountered severe complications during the program, b) not being able to participate in all intervention sessions; and c) wishing to discontinue participation in the program.

Sample Size

To determine the sample size, the researcher used the estimates for ANOVA suggested by Polit and Beck (2004, pp. 498-499). Eta-squared, which equals the sum of squares divided by the total sum of squares (the sum of squares between and the error term), can be used directly as the estimate of effect size. In Thailand, the previous similar study was conducted by Disayavanish (1994) who was examined the effect of Buddhist insight meditation on stress and anxiety which reported the sum of squares between (1.38) and the error term (13.49). So, the value of eta-squared was equal to 0.09. From the table 20-7 presented approximate sample size for ANOVA by Polit and Beck (2004, p. 499), this corresponds to sample size requirements of about 26 subjects per group, with a level of significance of .05 (probability of type 1 error) and a power of .80 (1-probability of type 2 error).

The data collection and intervention were conducted over eight months from October, 2006 to May, 2007. Multistage cluster sampling was used to obtain the participants. Chiang Mai municipality was divided into 4 counties: Nakon Ping, Kavira, Srivichai, and Mengrai. Two counties (Kavira and Srivichai) were randomly selected. Then, one community from the selected counties was randomly selected. Sixty Thai elderly women who met the criteria were chosen to participate in the study (see Figure 3).

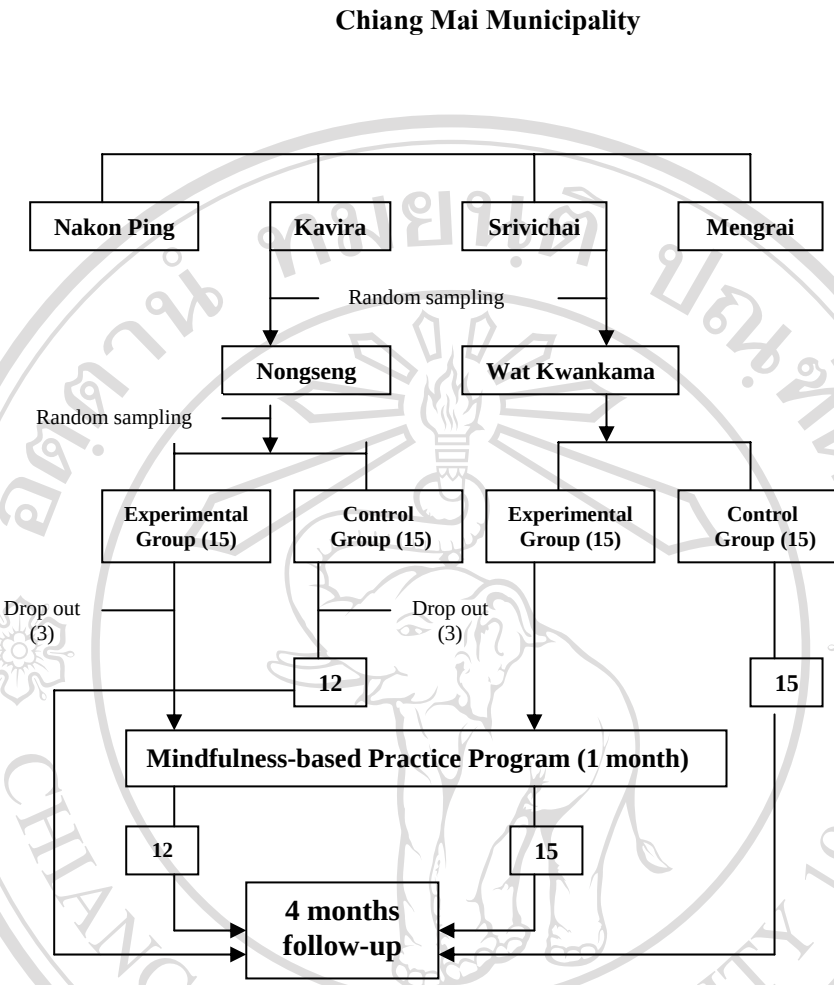

Figure 3. The summarization of sampling method

Research Setting

Elderly women who meet the criteria were recruited at Kavira and Srivichai districts in Chiang Mai. Data collection and intervention were done at the community centers of Nongseng and Wat Kwankama.

Research Instruments

The instruments in this study consisted of Beck Depression Inventory (BDI-IA) (Beck & Steer, 1993) and Cognitive-Mindfulness Practice Program.

The Instrument for Data Collection:

Beck Depression Inventory (BDI-IA) (Beck & Steer, 1993) was constructed in 1971 to measure the intensity of depression both in a hospital and community setting. The wording of the BDI-IA is clear and concise. The test contains 21 items, most of which assess depressive symptoms on a Likert scale of 0-3. People are asked to report feelings consistent with their own for the past week, including the day of the test. Several pilot versions of the BDI-IA were tested, and Beck copyrighted the final version in 1978 (Beck, 1978 as cited in Beck et al, 1979). BDI-IA was translated into Thai language by Sriyoung (1979). In Thailand, this instrument is very popular. The researchers reported alpha coefficients of BDI-IA 0.78-0.92. In this study, the researcher tested the reliability of this instrument with 12 elderly in community. The Cronbach's alpha coefficient was 0.88.

Clinical interpretation of scores is accomplished through criterion referenced procedures utilizing the following interpretive ranges: 0-9 is considered normal or minimal depression; 10-16 - mild depression; 17-29 - moderate depression; and 30-63 - severe depression (Beck, 1978 as cited in Beck et al., 1979).

Cognitive-Mindfulness Practice Program. Cognitive-Mindfulness Practice Program for depression of Thai elderly women was developed by the researcher based on Mindfulness and Cognitive Therapy. The program considered the appropriateness to the elderly within the Thai context. Its content validity was investigated by 5

experts composing of a psychiatrist, a psychiatric nurse, a psychiatric nurse instructor, a psychologist and a monk who had an interest in cognitive theory and Mindfulness. Cognitive-Mindfulness Practice Program was tried for applicable with 15 Thai elderly women at Maesa sub-district, Chiang Mai.

The aim of the Cognitive-Mindfulness Practice Program was to reduce depression by improving individuals' ability to be mindful of body, feelings, mind and mind-objects, consciously aware of automatic negative thoughts and their problematic behaviors, and to develop alternative thinking patterns and effective problem-solving. Cognitive-Mindfulness Practice Program consisted of 2 phases: Phase 1: Mindfulness practice (the Four Foundations of Mindfulness), Phase 2: Cognitive therapy which consisted of recognition of automatic thoughts, logical analysis of automatic thoughts, generating a rational response and problem solving. The program was conducted by the researcher who studied and trained about cognitive theory and cognitive therapy for one semester at the Faculty of Psychology, University of Texas at El Paso, USA. In regards to mindfulness skills, the researcher took mindfulness practice training with Prakru Pauwana Wirat and Professor Dr. Chamlong Disayavanish at meditation center in Chiang Mai, Thailand. In addition, the researcher also took one course with Dr. Bob Stahl at the mindfulness center in San Francisco, USA.

Cognitive-Mindfulness Practice Program consisted of 11 sessions, everyday for the first week and 2 days a week for 3 weeks (see Appendix B).

The theory strategies that this program was based on are summarized in Table 1

Table 1

Cognitive-mindfulness practice program centered on the four foundations of mindfulness and cognitive theory

Concept	Strategy
Phase 1: mindfulness practice based on the Four Foundations of Mindfulness *1. Foundation of the contemplation of the body*	Strategies used to enhance mindfulness based on The Four Foundations of Mindfulness as follows: 1. Explained about the goals of mindfulness practice and Buddhist principles such as the Four Noble Truths, the Noble Eightfold Paths and mindfulness practice based on the Four Foundations of Mindfulness, using the flip chart 2. Provided mindfulness training sessions. Participants learned how to practice mindful walking and mindful observation of rising and falling of abdomen. 3. A small group discussion was set up in order to allow participants' the opportunities to evaluate the results of training, identify problems of mindfulness training and to find out appropriate way to fit with each other to resolve problems.
2. Foundation of the contemplation of the feelings	1. Explained about pleasant, unpleasant and neutral feelings. 2. Provided mindfulness training sessions (mindful walking and mindful observation of rising and falling of abdomen). Participants learned how to acknowledge of the various conditions that arise through the pleasant, unpleasant and neutral feelings feelings.

Table 1 (Continued)

Concept	Strategy
	3. A small group discussion was set up in order to allow participants' the opportunity to evaluate the results of training, identify problems of mindfulness training and to find out appropriate way to fit with each other to resolve problems
3. Foundation of the contemplation of the mind	1. Explained about the various conditions (distraction, unfocused thinking, etc.) that arise through the mind. 2. Provided mindfulness training sessions (mindful walking and mindful observation of rising and falling of abdomen). Participants learned how to acknowledge of the various conditions that arise through the mind such as distraction, unfocused thinking. 3. A small group discussion was set up in order to allow participants' the opportunity to evaluate the results of training, identify problems of mindfulness training and to find out appropriate way to fit with each other to resolve problems.
4. Foundation of the contemplation of mental objects	1. Six sense-bases practice: researcher led "Lumyai game" for the participants to practice giving just bare attention to seeing, thinking, hearing, smelling, tasting and touching. 2. Provided mindfulness training sessions (mindful walking and mindful observation of rising and falling of abdomen). Participants learned how to acknowledge of seeing, thinking, hearing, smelling, tasting and touching.

Table 1 (Continued)

Concept	Strategy
	3. A small group discussion was set up in order to allow participants' the opportunity to evaluate the results of training, identify problems of mindfulness training and to find out appropriate way to fit with each others to resolve problems
Phase 2: Cognitive therapy *Step 1: Recognize and Record Automatic Thoughts*	The 3 steps are as follows: 1. Continued mindfulness practice around 30 minutes at the beginning of every session. 2. Explained about general information about depression, CT model, automatic negative thought and how thoughts, moods, and behaviors are all connected to each other. 3. A small group discussion was set up in order to allow participants' the opportunity to begin monitoring their automatic thoughts by using a change in emotion as a cue to initiate self-monitoring of what was going through their mind.
Step 2: Logical Analysis of Automatic Thoughts	1. A small group discussion was set up in order to allow participants' the opportunity to examine the evidence for their thoughts by using Socratic questioning such as "What is the evidence to support this thought?" "Are there any alternative interpretations?"

Table 1 (Continued)

Concept	Strategy
	2. Explained about cognitive distortions and gave the examples using the flipchart. Discussion and sharing of participants' cognitive distortions from their experiences. 3. A small group discussion was set up in order to help the participants consider all the possibilities by generating alternative hypotheses to their automatic thoughts.
Step 3: Generate a Rational Response	1. Explained about 2 ways to change the thought (reattribution and decatastrophizing) and gave the examples using the flipchart. 2. A small group discussion was set up in order to help the participants change their negative automatic thoughts using 2 ways (reattribution and decatastrophizing).

Protection of Human Rights

The study plan was approved by the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University. Informed consent was obtained from the participants before data collection. The researcher gave a comprehensive explanation and written description about the objectives and processes of the study, methods, potential risks and benefits of participation, and the protection of confidentiality of the participants. The study design created few risks which were not likely to produce any serious harm to participants either psychologically or physically. If the participants

were harmed, they were supported by the researcher and referred to hospital. The participants had freedom and time to make decision to participate in this project. After data collection had been completed, the researcher provided the program for the control group.

Data Collection Method

Data collection method was conducted as follows:

1) Data collection began after the approval of the study by the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University and the Research Ethics Committee of the Health Center. The researcher also requested permission from the community center.

2) At the community center, the researcher introduced herself, described the objectives of the study, the information that was presented in the informed consent form and the research methods and ask for cooperation in the study.

3) The researcher selected the prospective subjects who met the criteria and randomly assigned them into experimental group and control group. Informed consent was obtained at that time, and the BDI-IA was completed. Demographic data were also collected by research assistants who were trained by the researcher.

The Experimental Group

1) The researcher set the appointment dates for the experimental group to participate in the program.

2) Cognitive-Mindfulness Practice Program was provided for the experimental group to reduce depression. It was provide for one group per day. There

were 15 persons in each group. In sessions 1-5: Mindfulness practice was conducted in a group, everyday for the first week (Monday-Friday; 9am to 3pm). In sessions 6-11: Mindfulness meditation continued for around 30 minutes at the beginning of every session (Tuesday and Friday at 9.00am-12pm). The researcher gave general information and conducted group discussion about depression and CT.

3) Research assistants who were trained by the researcher checked the BDI-IA of the experimental group after completion of the program and at four months follow up.

The Control Group

1) The control group received usual care which was community support and nursing care from the community nurses.

2) The researcher set the appointment date for collecting data and data were collected using BDI-IA following the protocol by the research assistants.

3) After data collection had been completed, the researcher provided the program for the control group.

4) Research assistants who were trained by the researcher checked the BDI-IA of the control group after completion of the program and at four months follow up.

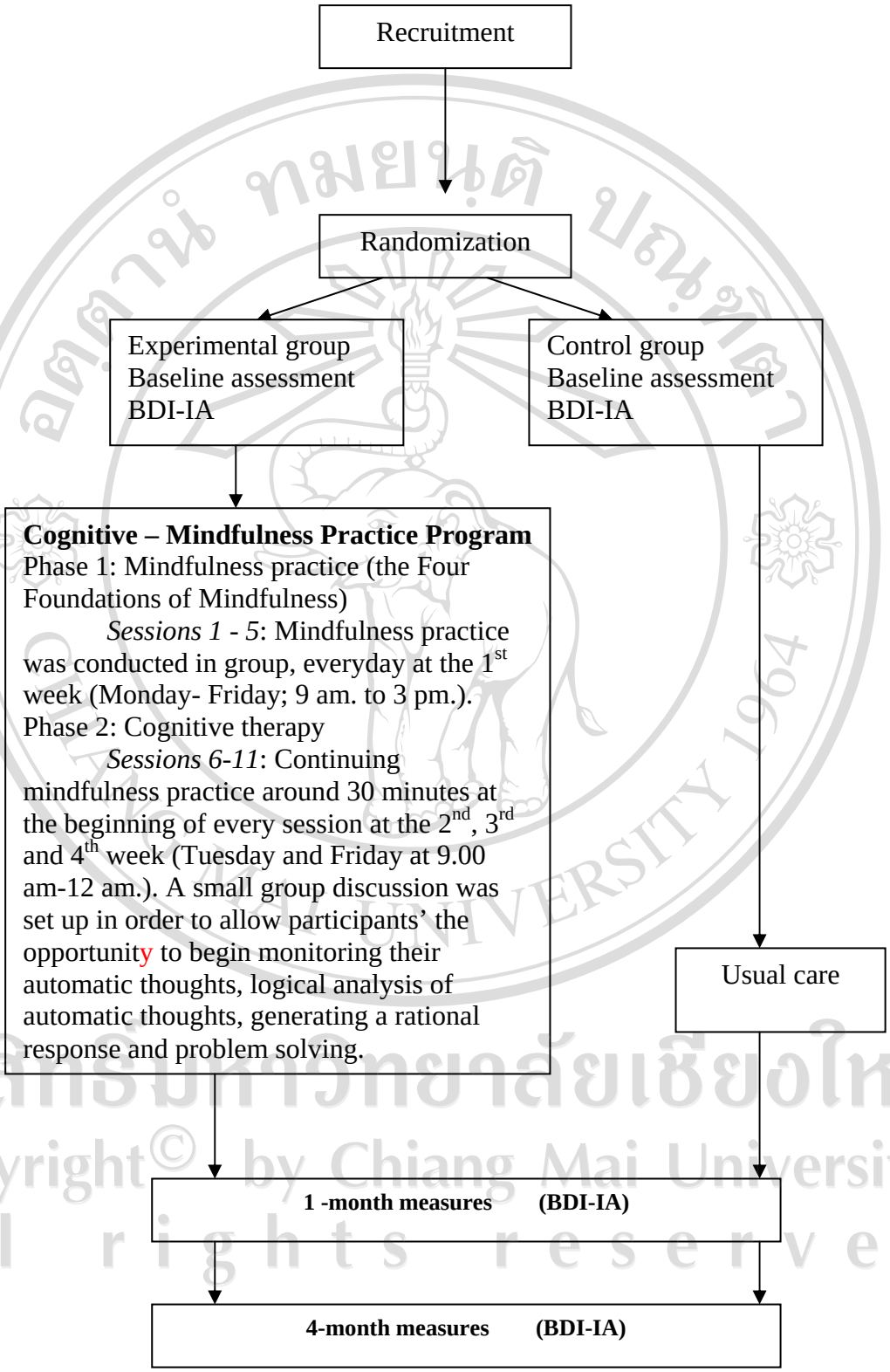

Figure 4. The summarization of data collection

Data Analysis

Demographic data were analyzed by descriptive statistics using frequency, percentage, mean, and standard deviation. Independent sample t-test, Chi-square and Fisher's exact test was used to examine the difference of characteristics between the experimental and control groups at baseline.

To investigate the effect of the Cognitive-Mindfulness Practice Program, depression scores of Thai elderly women were compared between the experimental group and control group and between points of measurement by using two-way mixed-design ANOVA.

Independent sample t-test was used to compare depression scores between the control and experimental groups at baseline. An analysis of covariance (ANCOVA) with pretest as covariate was used to examine the mean difference of depression scores at one month and four months in both experimental group and control group. Prior to conducting ANCOVA, the assumptions of ANCOVA were tested by the Kolmogorov-Smirnov test (normally distributed), the Levene's test (homogeneity of variance), and the linearity of the dependent variables and the covariate.

Repeated measures analysis of variance (ANOVA) was used to analyze the difference in the mean depression score between baseline, at one month and four months in the experimental and control groups. Post-hoc test was used to compare depression scores between each points of measurement in the control and experimental groups by using Bonferroni.