

## CHAPTER 4

### RESULTS AND DISCUSSION

This chapter is organized into two major parts: the first part focuses on the results of the study and the other is a discussion of those results. The results and discussion are presented into three parts: (1) description of subjects, (2) depression scores at different times (pre-treatment/immediate post-treatment/6 weeks post-treatment/12 weeks post-treatment), and (3) perceptions of participating adolescent students, their parents/guardians, and their teachers regarding the effectiveness of the treatment in adolescent students who received the brief cognitive-support treatment.

#### *Results*

##### *Subjects' characteristics*

Subjects in this study included mild to moderate depressed adolescent students (N = 70) treatment group (n = 35) and control group (n = 35). The mean age of the 70 student participants was 16.97 (SD = 1.05, range 15 to 19) and the majority were females (n = 49). Their mean grade point average was 2.60 (SD = .65, range 1.00 to 3.79) and most students lived with both parents (n = 58). Over one third had at least five other relatives in the home (n = 26). As farming was the students' most commonly reported family occupation (n = 46), the average monthly family income was extremely low at 5,065.7 bahts (\$126.64 US, SD = 2,420.17 bahts) with family income ranging from 1,000 to 12,000 bahts (\$25 to \$300 US) monthly. They had no history of substance use.

Comparing the treatment and control groups (Table 1), no significant differences in age, grade point average, or number of family members (all  $p$ 's > .05) and no differences in parent's marital status, family occupation, gender, or perceived adequacy of family income were found (all  $p$ 's > .05). The only difference between the treatment and control groups was in monthly family income. The average monthly family income in the experimental treatment group (6,100 bahts, \$152.50 US, SD = 2,514 bahts) was significantly higher ( $t(62.2) = 3.93$ ,  $p < .001$ ) than the monthly family income in the usual care group (4,031 bahts, \$100.78 US, SD = 1,834 bahts, Table 1). Because the two groups differed in monthly family income only,  $t(62.20) = 3.93$ ,  $p < .01$ , this income variable was treated as a covariate in subsequent between-group comparisons.

Table 1

*Numbers and Frequencies of Subjects' Demographic Characteristics*

Variables	Numbers (%)			<i>P</i>
	Total (N=70)	Treatment Group (n=35)	Control Group (n=35)	
<b>Gender</b>				
Female	49 (70)	25 (71.4)	24 (68.6)	1.00
Male	21 (30)	10 (28.6)	11 (31.4)	
<b>Parent Marital Status</b>				
Married	58 (82.9)	28 (80)	30 (85.7)	.75
Widowed	5 (7.1)	4 (11.4)	1 (2.9)	
Divorced	4 (5.7)	2 (5.7)	2 (5.7)	
Separated	3 (4.3)	1 (2.9)	2 (5.7)	
<b>Persons Living with</b>				
<b>Student</b>				
Parents	62 (88.6)	33 (94.3)	29 (82.9)	.26
Relatives	3 (4.3)	2 (5.7)	1 (2.9)	
Others	5 (7.1)	-	5 (14.3)	
<b>Family Occupation</b>				
Farmer	46 (65.7)	22 (62.9)	24 (68.6)	.62
Employee	22 (3.4)	12 (34.3)	10 (28.6)	
Tradesman	11 (15.7)	9 (25.7)	2 (5.7)	
Government Official	1 (1.4)	1 (2.9)	-	

Table 1 (continued)

Variables	Numbers (%)			<i>P</i>
	Total (N=70)	Treatment Group (n=35)	Control Group (n=35)	
Monthly Family				
Income				
< 3,000	20 (28.57)	-	4 (11.43)	.001
3,000 – 6,000	35 (50)	23 (65.71)	28 (80)	
> 6,000	15 (21.43)	12 (34.29)	3 (8.57)	
Adequacy of Family				
Income				
Adequacy	43 (61.4)	25 (71.4)	18 (51.4)	.09
Inadequacy	27 (38.6)	10 (28.6)	17 (48.6)	

Most of the parents/guardians who participated in the study were the mothers of the identified students ( $n = 26$ ). Their ages ranged from 35 to 62 years ( $\bar{X} = 46.09$ ,  $SD = 6.58$ ), monthly family income ranged from 3,000 to 12,000 bahts ( $\bar{X} = 6,100$ ,  $SD = 2,514.08$ ) or \$75 to \$300 ( $\bar{X} = 152.5$ ,  $SD = 62.85$ ). They were predominately married ( $n = 28$ ), Buddhist ( $n = 28$ ), had a primary level of education ( $n = 22$ ), and were farmers ( $n = 19$ ).

The age of the teachers ranged from 42 to 46 years old ( $\bar{X} = 44.2$ ,  $SD = 1.79$ ), and monthly family income ranged from 20,000 to 30,000 bahts ( $\bar{X} = 23,338$ ,  $SD = 3906.25$ ) or \$500 to \$750 ( $\bar{X} = 583.45$ ,  $SD = 97.66$ ). Most were female ( $n = 3$ ), who

were married (n = 4), with a master's level of education (n = 3), and their religion was Buddhism (n = 4) (Table 2).

Table 2

*Number of Parents/Guardians' and Teachers' Demographic Characteristics*

Variables	Numbers	
	Parents/Guardians (n=35)	Teachers (n=5)
Gender		
Female	26	3
Male	9	2
Marital Status		
Single	-	1
Married	28	4
Divorced	7	-
Religion		
Buddhism	28	4
Islam	7	1
Education		
Primary	22	-
High school	7	-
Vocational Education	6	-
Bachelor	-	2
Master	-	3

Table 2 (*continued*)

Variables	Numbers	
	Parents/Guardians (n=35)	Teachers (n=5)
Occupation		
Farmer	19	-
Tradesman	7	-
Housekeeper	5	-
Employee	4	-
Government Official	-	5

#### *Depression scores*

The effectiveness of the brief cognitive-support treatment for depression was tested using a repeated measurement of multivariate analysis of covariance (MANCOVA) on the subjects' BDI and HRS scores between treatment and control groups as the between subjects variable; measurements were taken at different times (pretreatment, immediate post-treatment, 6-weeks, and 12- weeks post-treatment) as the within-group variable (Table 3, Figures 7 & 8). Monthly family income was added as a covariate in these analyses. One-way ANCOVA's were computed on the group data at each point in time to decompose significant group and time interactions. Paired *t*-tests were computed to examine changes in individual BDI and HRS items at different time points for the adolescent students in the treatment group only.

*Beck Depression Inventory (BDI)*. Analysis of the BDI scores revealed a significant group and time interaction,  $F(3, 65) = 82.83, p < .001$ . This interaction was a result of the two groups having similar levels of depression at pretreatment  $F$

(1, 67) = 0.20,  $p > .65$ , and the experimental brief cognitive-support treatment group having significantly lower BDI scores than the control group at all three post-treatment time points: immediate post-treatment,  $F(1, 67) = 157.13$ ,  $p < .001$ ; 6 weeks,  $F(1, 67) = 215.28$ ,  $p < .001$ ; and 12 weeks,  $F(1, 67) = 453.77$ ,  $p < .001$ . This interaction also showed a main effect of time,  $F(3, 65) = 10.42$ ,  $p < .001$ . The pretest BDI scores were significantly higher than the scores of BDI immediate post-treatment, 6-weeks, and 12-weeks. A main effect for the treatment group,  $F(1, 67) = 216.87$ ,  $p < .001$ , showed that the BDI scores for the experimental brief cognitive-support treatment group were significantly lower than the BDI scores for the usual care treatment group.

The individual BDI items that decreased significantly from pretreatment to post 12-weeks were sadness, hopelessness, past failure, anhedonia, punishment, self-dislike, self-blame, crying, agitation, loss of interest in activities, indecisiveness, insomnia, and appetite. BDI items showing the largest reduction in symptom severity were feelings for punishment, crying, and agitation in that order.

*Hamilton Rating Scale for Depression (HRS)*. Analysis of the HRS scores revealed a significant group and time interaction,  $F(3, 65) = 82.46$ ,  $p < .001$ . Comparable to the findings for the BDI scores, this interaction also was a result of the two treatment groups having similar levels of depression at pretreatment,  $F(1, 67) = 0.77$ ,  $p > .35$ . However, the HRS scores in the experimental brief cognitive-support treatment group were significantly lower than those of the usual care group at all post-treatment time points: immediate post-treatment,  $F(1, 67) = 149.19$ ,  $p < .001$ ; 6-weeks,  $F(1, 67) = 342.08$ ,  $p < .001$ ; and 12-weeks,  $F(1, 67) = 313.44$ ,  $p < .001$ . This interaction also showed a main effect of time,  $F(3, 65) = 16.88$ ,  $p < .001$  with

pretreatment HRS scores exceeding immediate post-treatment, 6-weeks, and 12-weeks of HRS scores, and a main effect for group,  $F(1, 67) = 280.51, p < .001$ , with the experimental brief cognitive-support treatment group having lower HRS scores than the usual care treatment group.

Examination of individual HRS items showed significant reduction from pretreatment to 12-week in severity for depressed mood, guilty feelings, suicidal feelings, early insomnia, late insomnia, work and activities impairment, agitation, psychological anxiety, somatic anxiety, somatic symptoms (gastrointestinal and general), and sexual dysfunction/menstrual dysfunction. Items pertaining to psychomotor retardation, hypochondrias, weight loss, and insight were not endorsed by subjects at either time point and thus had no change in severity. HRS items showing the largest reduction in symptom severity were sexual dysfunction/menstrual dysfunction, gastrointestinal symptoms, and psychological anxiety in that order.

The effect size at immediate post-treatment, 6 weeks, and 12 weeks post-treatment was .70, .76, and .87 in BDI and .69, .84, and .82 in HRS. The large effect size of the treatment program was also found in this study (Table 4).



Table 3

*Summary of Repeated Measures Multivariate Analysis of Covariance (MANCOVA) and One-Way ANCOVA Results (N = 70)*

Variable	Time								ANCOVA <i>F</i> tests		
	Pretreatment		Immediate Post-		6 Weeks Post-		12 Weeks Post-		Group	Time	Interaction
	Mean		Treatment Mean		Treatment Mean		Treatment Mean		Main	Main	
	(SD)		(SD)		(SD)		(SD)		Effect	Effect	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control			
Depression											
Scores											
BDI	13.63	13.77	3.26	12.94	2.69	14.23	1.77	15.26	216.9	10.42	82.83
	(2.78)	(2.67)	(2.51)	(3.21)	(2.3)	(3.39)	(1.99)	(2.65)			
HRS	12.00	11.71	3.43	11.00	2.91	12.71	3.03	14.20	280.5	16.88	82.46
	(1.89)	(2.07)	(1.44)	(2.95)	(1.31)	(2.48)	(1.56)	(3.00)			

BDI: Beck Depression Inventory, HRS: Hamilton Rating Scale for Depression.

Table 4

*Effect Size of BDI and HRS Scores between Time Points*

Outcome variable	Time															
	Pretreatment				Immediate Post-Treatment				6-Weeks Post-Treatment				12-Weeks Post-Treatment			
	Mean		A	ES	Mean		A	ES	Mean		A	ES	Mean		A	ES
	T	C			T	C			T	C			T	C		
BDI	13.54	13.86	2.72	.00	3.28	12.92	2.86	.70	2.82	14.10	2.84	.76	1.93	15.10	2.32	.87
HRS	12.09	11.63	1.98	.01	3.43	11.00	2.20	.69	2.92	12.71	1.90	.84	2.98	14.25	2.28	.82

T: Treatment group, C: Control group, A: Average SD, ES: Effect Size

BDI: Beck Depression Inventory, HRS: Hamilton Rating Scale for Depression.

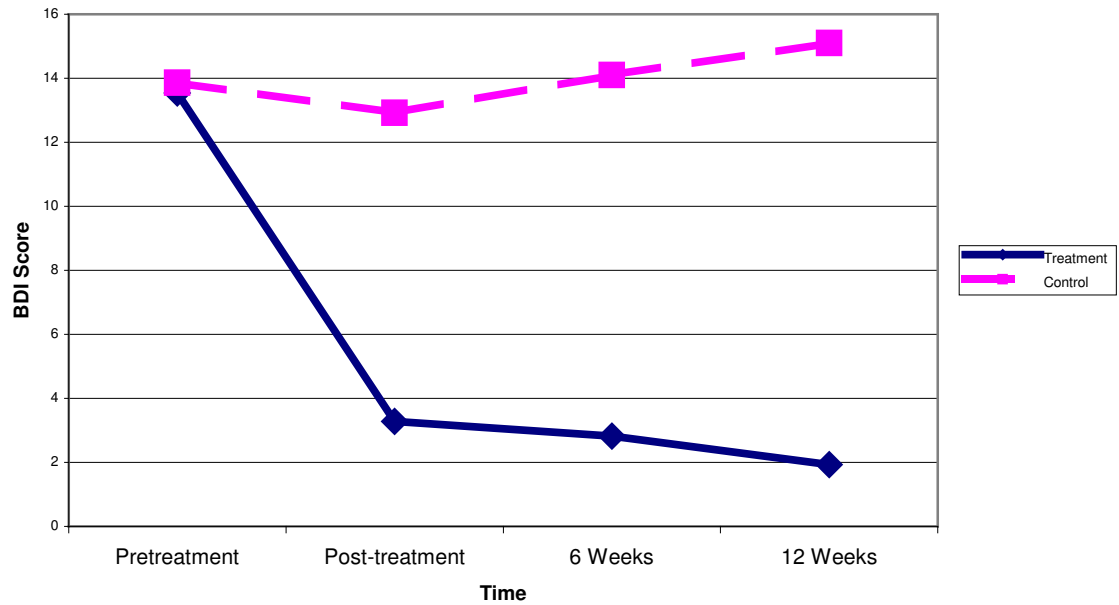


Figure 7 BDI's depressive score from pretreatment to week 12

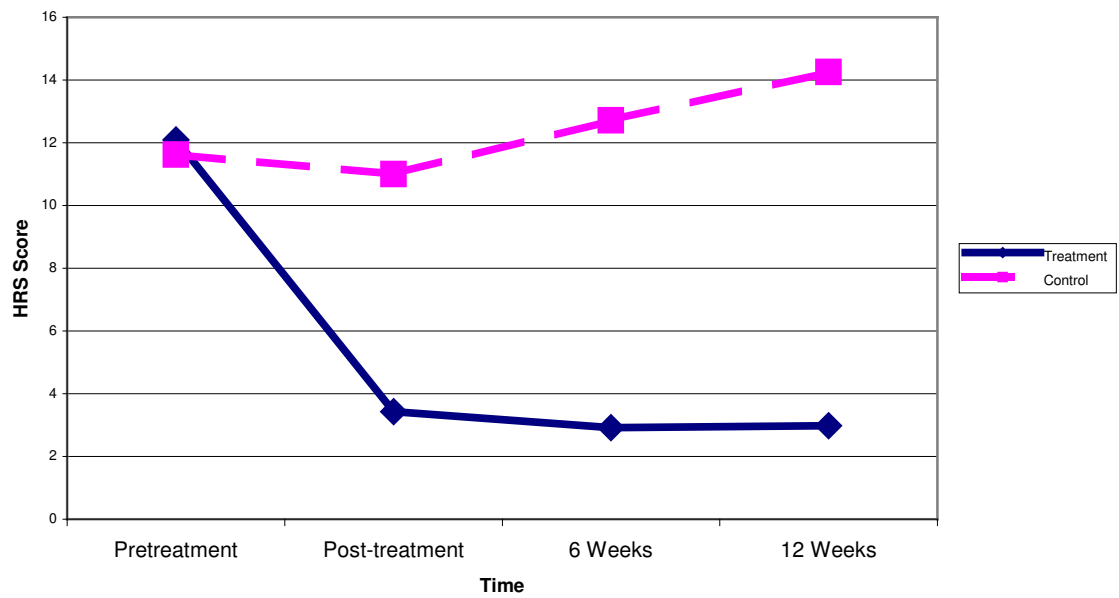


Figure 8 HRS's depressive score from pretreatment to week 12

*Perceptions of treatment effectiveness*

The perceptions of treatment effectiveness were examined by looking at the ratings of the adolescent students who received the brief cognitive-support treatment, their parents/guardians, and their teachers separately. The possible range of scores of the adolescent students' perceptions of treatment effectiveness questionnaire ranged from 12 to 60 whereas the parents/guardians' and teachers' perceptions of treatment effectiveness range from 5 to 25. This was done by computing a repeated measures multivariate analysis of variance (MANOVA) on subjects' perceptions of treatment effectiveness scores across the 4 time points (pretreatment/immediate post-treatment/6 weeks/12 weeks post-treatment). Paired *t*-tests were computed to examine differences between perception scores at different time points.

There was a main effect of time for the adolescent students' perceptions of treatment effectiveness;  $F(3, 32) = 148.41, p < .001$ . This was a result of the pretreatment perception of treatment effectiveness being significantly lower than the students' perceptions of treatment effectiveness at immediate post-treatment,  $t(34) = -18.00, p < .001$ ; at 6 weeks,  $t(34) = -19.75, p < .001$ ; and at 12 weeks,  $t(34) = -21.67, p < .001$ . The perceptions of treatment effectiveness immediately at post-treatment was significantly lower than the perceptions of treatment effectiveness at post 6 weeks,  $t(34) = -4.20, p < .001$ , and at post 12 weeks,  $t(34) = -3.64, p < .01$ . There was no difference in the perceptions of treatment effectiveness between 6 weeks and 12 weeks,  $t(34) = -1.93, p < .07$ . Similar results were observed for the parents'  $F(3, 32) = 449.65, p < .001$  and teachers' perception of treatment effectiveness  $F(3, 2) = 25.59, p < .05$ .

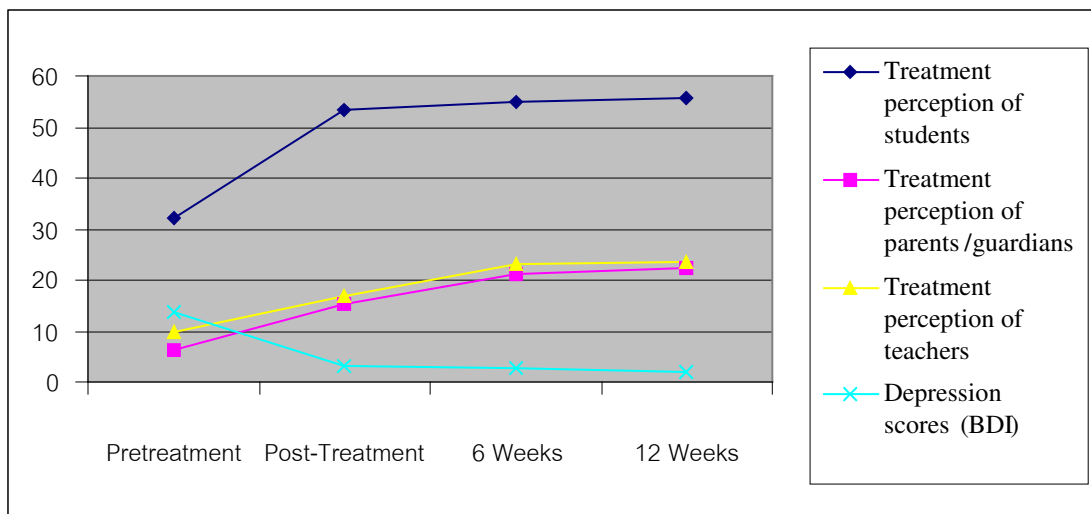
The statistical analysis showed that adolescent students' perceptions of treatment effectiveness obvious increased immediately at post-treatment and the scores were rather sustained at post 6-and 12 weeks, similar with parents/guardians' and teachers' perceptions of treatment effectiveness scores. Adolescent students' BDI scores obviously decreased immediately at the post-treatment, but then were rather sustained at 6-and 12 weeks. Across periods of measurement, there were a inverse score between BDI and perception of treatment effectiveness among adolescent students, their parents/guardians, and their teachers in the treatment group (Figure 9).

Table 5

*Adolescent Students, Their Parents/Guardians, and Their Teachers' Perceptions of Treatment Effectiveness*

Variable	Time							
	Pretreatment		Immediate		6 Weeks		12 Weeks	
			Post-Treatment		Post-treatment		Post-Treatment	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Perceptions of treatment effectiveness								
Students (n = 35) (12-60)	32.11 <sup>a</sup>	6.65	53.14 <sup>b</sup>	5.83	54.74 <sup>c</sup>	5.16	55.86 <sup>c</sup>	5.14
Parents/guardians (n = 35) (5-25)	6.29 <sup>a</sup>	2.09	15.31 <sup>b</sup>	3.15	21.31 <sup>c</sup>	2.26	22.31 <sup>c</sup>	2.05
Teachers (n = 5) (5-25)	10.00 <sup>a</sup>	1.58	17.00 <sup>b</sup>	1.58	23.00 <sup>c</sup>	2.35	23.6 <sup>c</sup>	2.07

Means with different superscripts indicate a significant difference in perception of treatment effectiveness between time points,  $p < .01$



*Figure 9* Students' BDI and perceptions of treatment effectiveness scores and parents/guardians' perceptions of treatment effectiveness scores from pretreatment to week 12

### *Discussion*

#### *Subjects' characteristics*

In this study, between-group comparisons were computed on subjects' characteristics that have been found in other research studies to influence depression treatment outcomes with the intention of using as covariates any variables that distinguishable between the treatment and control groups. These comparisons were made via independent t-tests and chi square analyses. The results showed no significant differences in the variables of age, grade point average, or number of family members (all  $p$ 's > .05) and no differences in parent's marital status, family occupation, gender, or perceived adequacy of family income were found (all  $p$ 's > .05).

Based on these statistical analyses, this study gained greater confidence for testing the effectiveness of the brief cognitive-support treatment on depression. As most related literature indicates that among the basic characteristics of depressed adolescent students, personal information including gender, age, grade point average, history of substance use, and family structures including parents' marital status, persons living with the student, number of family members, family occupation, monthly family income, and adequacy of family income, may induce depression and influence the cognitive behavioral treatment (Chaput et al., 1998; Galaif et al., 2003). Among these variables age, gender, and substance abuse most influence the depression and depression treatment (Chaput et al., 1998; Lynch et al., 2001).

Numerous studies have documented significant age and gender differences regarding depression (Galaif et al., 2003). The majority of the 70 adolescent students in this study were female ( $n = 49$ ) with a mean age of 16.97 ( $SD = 1.05$ , range 15 to 19). As can be observed from the characteristics of these participants during adolescence, the increase in depression around the onset of puberty was greatest in girls. There is greater incidence among girls, so that by adolescence the female-to-male ratio approaches 2:1 (Angold & Rutter, 1992 cited by Chaput et al., 1998; Lynch et al., 2001; Weissman, 2002). This is also supported by the preliminary focus group study which showed that in Thai adolescent students, depression developed in females more readily than in males. There is a greater expectation that Thai female adolescents were always expected to be good and to their suppress emotions to avoid conflict and frustration with the rules at home and at school more than males. And those females who disobey these social rules will be, by the home, school, and society, more blame worthy than the males. These gender inequalities were reasons to



support a higher incidence of depression in Thai female adolescents (Aekwarangkoon, 2005).

Substance abuse is another variable that directly influences depression and depression treatment. Pharmacological studies have substantiated that drug abuse alters emotions, and those mental faculties that affect human ability to control cognitive activities such as decision-making and inhibition (Carpenter, 2001; Falconer, 2006). Substance abuse induces pathological changes, some of which are irreversible within the brain and central nervous system. The results of substance abuse give rise to social, psychological, and behavioral problems (Falconer, 2006). Based on these determinants, six eligible students who had active substance abuse problems were excluded from this study.

Nevertheless, the only difference between the treatment and control groups in this study was monthly family income. The average monthly family income in the experimental treatment group (6,100 bahts, \$152.50 US, SD = 2,514 bahts) was significantly higher ( $t(62.2) = 3.93$ ,  $p < .001$ ) than the monthly family income in the usual care group (4,031 bahts, \$100.78 US, SD = 1,834 bahts (Table 1). Because the two groups differed only in monthly family income,  $t(62.20) = 3.93$ ,  $p < .01$ , this income variable was treated as a covariate in subsequent between-group comparisons.

#### *Depression scores*

BDI and HRS depression scores were used as the outcomes of treatment effectiveness in this study. Brief cognitive-support treatment was significantly more effective than the usual care in reducing mild to moderate symptoms of depression in young Thai adolescent secondary school students. The treatment reduced both BDI,

self-rated symptoms of depression and HRS, provider rated symptoms. The study findings also showed that a three-session dose of brief cognitive interventions combined with three-weeks of supportive interpersonal interactions delivered during the school day produced a significant reduction in symptoms of depression that continued for 12-weeks.

The brief cognitive-support treatment was designed to reduce negative thinking, promote realistic thinking, increase positive interpersonal interactions with others, relieve emotional distress, and to improve self-management skills. This brief cognitive-support treatment model was intended to break the cycle of negative thoughts and negative interpersonal interactions. Hence, the person could feel better, think more clearly, and make better decisions (Bush, 2003). These results provided preliminary evidence of treatment effectiveness in support of the model.

The FRAMES model of brief cognitive interventions differs from strict cognitive therapy for depression (Beck et al., 1979) in that the intervention was not used to directly counter the specific negative thoughts held by the participants. The FRAMES model provides cognitive methods of improving a range of coping responses to distressing problems. Improved self-management of mild to moderate depressive symptoms can reduce the level of depression symptom severity because mild to moderate depressive symptoms have the risk of later becoming more severe depressive symptoms. With this additional treatment benefit in mind, our combined model of brief cognitive-support treatment for depression was designed to address early negative alterations in patterns of thinking and interacting with others as interrelated causal pathways to depression symptom onset and increasing symptom severity. Brief cognitive-support treatment used structured interventions to focus

attention on patterns of negative thinking while at the same time promoting more frequent interpersonal interaction with other supportive individuals. In effect, this treatment promotes more realistic cognitive and interpersonal responses to circumstances and problems of stress and mental anxiety (Galaif et al., 2003).

The effectiveness of the brief cognitive-support treatment can be explained by the psychological theory that depression can be improved by positive thought that influences emotion, feeling, cognition, and behaviors (Beck et al., 1979; Bush, 2003; Westermeyer, 2003). The perception and cognitive processing of adverse events trigger depression (Gordon et al., 1988). Depression in young people is associated with negative thinking with some recent studies reporting that such thinking can presage subsequent depression (Harrington & Dubicka, 2002). Integration of brief cognitive treatment for depression applied more easily and appropriate within the Thai context and with school and environment support may provide effective intervention for reducing depression.

Brief cognitive-support treatment encourages positive thinking for the depressed adolescent students changing their inappropriate thoughts into appropriate thoughts (Beck et al., 1979). And, by the same token, supportive interventions enable the adolescents to maintain the capability to transform their thought processes on a long-term basis (Finfgeld-Connett, 2005; Piper et al., 2002). As depression results from cognitive distortion that develops into a life pattern, it is easy for it to recur once the intervention ends. Supportive interventions are consistent with the nature of adolescents who seek out support from friends, teachers, or parents/guardians for coping strategies to deal with their problems (Galaif et al., 2003). Supportive care as an environment support for depressed adolescents has a positive influence on their

psychological well-being, both as a direct health promoting agent and as a buffer against the negative effects of stress and depression (Turner & Butler, 2003).

The results of this investigation offer strong support for our predictions that brief cognitive-support treatment sessions are of therapeutic value to depressed Thai adolescents with mild to moderate depression. In addition, these improvements in the treatment group's psychological well-being were sustained beyond the treatment period (at least 12 weeks). Conversely, adolescents who were not in the treatment group showed no significant change in their psychological well being over time.

It is interesting to conjecture as to why this intervention seemed not only to work, but also to be successful beyond a 6-week and 12-week period of time. The researcher speculates that the combined model of brief cognitive-support treatment for depression may have positive results for, at least, five reasons.

First, the treatment was successful in reducing depressive symptoms because of the structured nature of the brief cognitive treatment, particularly by providing the adolescents with brief cognitive interventions using a process of FRAMES: feedback (F), responsibility (R), advice (A), menu of options (M), empathy (E), and self-efficacy (S). Adolescents received feedback in the form of accurate symptom information (their BDI score) compared with the actual rate of adolescent depression in the same province at Nakonsithammarat of Thailand, they received general etiology information about depression, as well as descriptive information about common psychological and behavioral responses to symptoms of depression. Based on these activities, depressed adolescents not only were more aware of their depressive symptom levels but also the stigma of depression was reduced because they learned that depressive symptoms can occur in anyone.

These adolescent students also responded to the responsibility of making changes in their thoughts that induced the problem in the first place. This step is related to research that consistently shows that people are most likely to take action when they perceive that they personally have chosen to do so (Fagan, 2003). In addition, this step also engendered greater understanding and concern that their negative or inappropriate thoughts were the causes of their depressive symptoms and that they were capable of taking responsibility to eliminate the problems by themselves (Westermeyer, 2003).

During the next step of advice, they were given enough information to develop various coping strategies to overcome their problems and to select choices from the menu of options. These steps increased the individual's active involvement in determining either the strength or the weakness of each strategy. They also learned to critique their problems and to apply appropriate coping strategies by actively participating and discussing these with their guidance teachers. Finally they were selecting the best options that were appropriate for themselves. A vast number of studies have shown that individuals who have enough information to support their judgments will think more clearly, make better decisions, and increase self-confidence to solve their problems (Fagan, 2003).

In addition, empathy and self-efficacy were combined at every step. Empathy was conveyed during the interventions by speaking directly, simply, honestly, good listening intently, acknowledging the person's distress, exploring the best goal for the depressed student discussing issues of confidentiality, and instilling confidence (Budman & Gurman, 1988; Fagan, 2003). The adolescents received the teacher's guidance with empathy, understanding, and reassurance for managing their thoughts.

Empathy is one of the strongest predictors of therapeutic success and for motivating and treating individuals whereas self-efficacy involves helping the individual to come to believe that meaningful changes can be achieved (Fagan, 2003). Individuals were empowered to manage depressive symptoms by the guidance teacher in the way that they themselves selected. They also learned and gained from the feedback of the guidance teacher.

The FRAMES process achieved the cognitive intervention goals that works by identifying and challenging distortions in thinking patterns that contain a bleak view of oneself, one's activities, and the future (Beck et al., 1979). The guidance teacher and the depressed adolescent student collaborated on sorting out what way the adolescent tended to think, identified more realistic ways to think and substituted these for the previous depressive cognitive set. When depressed people learned to identify distorted automatic thinking and to replace this with more realistic thoughts, depression could be reduced (Bush, 2003). Moreover, when people became adept at altering negative thoughts and beliefs, their likelihood of experiencing episodes of depression in the future decreases (Westermeyer, 2003).

Brief cognitive processes were designed as a specific intervention to treat depressed adolescent students, stressing the importance of belief systems and thinking in determining behaviors and feelings (Beck et al., 1979; Sanderson, 2003). Brief cognitive focus on cognitive restructuring (CR), examines unwanted thoughts, attitudes, and beliefs (called cognitive processes) (Sanderson, 2003). The effectiveness of brief cognitive intervention can be explained based on cognitive therapy, that depressed people can be treated by eliminating the processing of

information in negative ways about the self, the world, and about the future thus ameliorating depressive symptoms (Beck et al., 1979).

Secondly, the treatment was successful in reducing depressive symptoms because of the supportive interventions both daily and weekly consisting of five activities: (1) Sabai Sabai Sai Hunsa, (2) The Sabai Show, (3) Kradan Fitne, (4) Gift-Box, and (5) Sangsan Wannasil. Mental health education broadcast on the public announcement system was called “Sabai Sabai Sai Hunsa”, a daily 15-20 minutes audio broadcast program that focused on accurate information about depression and self-management. The contents promoted a true understanding that depressive symptoms were normal emotions that occurred in everyone and could be eliminated by applying different strategies. This activity not only increased understanding about depression but also reduced the stigma of being depressed by changing the attitude about depression among the school body. In addition, adolescents were able to relax with the music while at the same time receiving knowledge.

The game show was called “The Sabai Show”, a weekly activity of 2 hours, included songs, mini-concerts, and games as a question and answer format that aimed at decreasing personal feelings of social stigma associated with depression. This activity promoted a positive atmosphere within the school environment by improving accurate knowledge of depression through relaxing activities.

Relaxation board called “Kradan Fitne” was used daily allowing the adolescents to share their personal experiences and read the experiences of others. These writings were intended to increase their comfort with expressing difficult emotions and to reduce their internal conflict by expressing negative emotions.

Another activity was called “Gift-Box” a weekly discussion group of 3-4 adolescents accompanied by one of their best friends and two liked teachers allowing depressed students to share their distressing concerns with others. Adolescents could share experiences of their conflicts, frustrations, and of their strategies to manage depressive symptoms and in this way, they can become clearer in their understanding and are able to learn varied views from their peers and teachers. The last activity was called “Sangsan Wannasil” a weekly hour of drawing and painting after lunchtime which provided an additional opportunity to develop relaxation skills or to release negative emotions, feelings, and frustration through art.

Based on supportive theory, the characteristics of supportive interventions in this study played a significant role in increasing the effectiveness of depression treatment among depressed adolescent students by enhancing positive interpersonal interaction and support through which the adolescents could learn additional methods of self-management and reduced depression (Heino et al., 2001; Piper et al., 2002; Stice et al., 2004).

Thirdly, the intervention’s success may be related to the supportive interaction that apparently developed in teamwork between depressed adolescents, their parents/guardians, their teachers, peers, and nurses. Information recorded by the depressed adolescents, their parents/guardians, and their teachers in the handbooks revealed definite relationship cohesiveness and a strong positive bond between the depressed adolescents, their parents/guardians, and their teachers. Evidence clearly supports that parents, teachers, and peers are key persons for guiding, providing support, and enhancing a person’s ability to cope with depression or to alleviate the impact of the stressful event on adolescents (Cohen & Willis, 1985; Heino et al., 2001; Jones,



2002). In addition, the nurses created a trusting atmosphere that lessened the adolescents' anxiety and depression. The depressed adolescents in the treatment group were able to learn how to think more effectively in order to become stable and happy. This insight apparently motivated them to change their negative thoughts and behaviors.

Fourthly, the contents of the intervention handbooks seemed critically tailored to the concerns of depressed adolescents, parents/guardians, and teachers. The contents in the handbooks consist of four parts: (1) the effect of depression, (2) strategies to assess depressive symptoms, (3) strategies to manage depressive symptoms, and (4) experiences for managing depression of the participants. Each part in the handbook reinforced the concept of the depressed adolescents confronting their depression themselves, as well as with the support of their parents/guardians, and their teachers. Traditional approaches too often reinforced passivity and negative thoughts of depressed adolescents. The many strength-building activities provided within the handbooks may have helped the depressed adolescents to learn and to try new, more appropriate strategies and skills in order to eliminate negative thoughts patterns because these skills appear to have endured long after the depression was discontinued. Specific themes relevant to overcoming depression were introduced to the depressed adolescents and emphasized throughout the sessions (e.g. adolescents are worthwhile and significant, people have control over their thoughts and behavior, people can make choices, we can not change others but only ourselves, etc.). These depressed adolescents learned how to change their negative thoughts, build self-esteem, and support networks, as well as how to let go of their guilt, loss, and grief. Depressed adolescents became more self-aware and independent.

The fifth reason for the intervention's success may be related to providing the depressed adolescents, parents/guardians, and teachers with handbooks as a guideline they could study and refer to at any time. The guidelines in the handbooks may have been valuable to the depressed adolescent's improvement in psychological functioning. Adolescents tended to become their own psychotherapists and apparently their success generated more success as time went on. The participants of the treatment group did not remain at post treatment levels, but continued to improve psychologically at 6 weeks and 12 weeks after post treatment. This was not true of the participants in the control group.

Findings indicate that this combined approach was more effective than the usual care currently provided in the secondary schools for those who participated in the study. Different results were achieved in reducing depressive symptoms between the treatment group and the control group may be because of the differences in the characteristics between brief cognitive-support treatment and usual care. First, there was a difference in the time frame of the treatment. Usual care was only for a single 30 to 40 minutes individual session whereas the brief cognitive-support treatment was provided over a period of three sessions. For additional sessions, the teacher-guidance advisors could follow-up with an evaluation of the prior session of treatment from the adolescents' homework. Another difference was the counseling technique that was used in the helping process. The guidance teachers in the treatment group were trained to use techniques of counseling whereas no one was trained in the control group. The guidance teachers in the control group provided in-depth interviews to comprehensively assess the depressed students and taught them to use thought stopping to eliminate unwanted thoughts by studying harder or spending more

pleasure time with peers. Although these methods improved the students' avoidance of their negative thoughts, it was difficult to solve the root problems. These methods seemed to oppose their unwanted thought in the short run but they could not be effective in the long run because the adolescents could not determine what were inappropriate thoughts and develop strategies to manage their thinking.

#### *Perception of treatment effectiveness*

Results of the analysis in scores on perception of treatment effectiveness among adolescent students undergoing brief cognitive-support treatment, their parents/guardians, and their teachers rated brief cognitive-support treatment as effective in reducing depressive symptoms among mild to moderate depressed Thai adolescent students.

All of these three groups were involved since the beginning of the study. Before the brief cognitive-support treatment was started, they were invited to obtain accurate information about depression. They were informed that depression is a normal psychological symptom that can occur in anyone and that it can be eliminated by an effective supportive environment. In addition, the activities in the treatment were determined by the three groups through open discussion and brainstorming. Thus, this may reinforce their strong agreement in the effectiveness of the brief cognitive-support treatment because participants will actively collaborate in the treatment when they perceive how to do so (Fagan, 2003). In addition, the effectiveness of the treatment will be enhanced when they agree to the treatment (Bloch, 2006).

The structural nature of the brief cognitive-support treatment may be another reason that increased the participants' perceptions of treatment effectiveness. The treatment was designed to enhance the importance of a supportive environment in the family and in the school for increasing the effectiveness of the brief cognitive interventions. A deeper understanding by the depressed adolescent students while actively participating in a help process with others strengthened their bonds and relationships were reflected in the information recorded in the handbooks. The information in the handbooks revealed that the three groups learned and created a strong positive bond between each other. In the helping process, adolescent students received training and emotional support from key individuals in their lives, thus enhancing their ability to manage their depressive symptoms (Heino et al., 2001; Jones, 2002).

Interestingly, the results also showed that the scores of perceptions of treatment effectiveness among adolescent students, their parents/guardians, and their teachers changed inversely compared with the depression scores. Perceptions of treatment effectiveness among adolescent students included treatment expectations and satisfaction and among their parents/guardians and their teachers included only treatment satisfaction. This finding supported the results from previous research that a positive perception of treatment effectiveness was associated with the success of the treatment outcomes (Finch et al., 2005; Lee, Song, Sohn, Jeong, & Kwon, 2002; Safren, Heimberg, & Juster, 1997). Participants' treatment expectations of positive outcomes of treatment potentially are clinically significant in that hopeful treatment expectations are thought to impact upon treatment itself, whereas satisfaction with the treatment effectiveness improves participants' confidence to sustain the effectiveness

of the treatment (Finch et al., 2005). This may also be due to the unique characteristic of human beings in that their mental representations of the past and of the future powerfully influence their present feelings and behaviors (Frank, 1968; Lee et al., 2002). Low treatment effectiveness perceptions in participants treated for depression may significantly impact their ability to achieve their desired treatment outcomes (Lee et al., 2002).

Interestingly, all three groups, and especially the teachers, mentioned the cost effectiveness of using the brief cognitive-support treatment for reduction as well as prevention of depressive symptoms among adolescent students in the schools. Three teachers stated that it will be great to use this treatment for preventing depression or other mental health problems as it can save costs in the long term, that this treatment can help their students and reduce costs, and that costs would be reduced if this treatment is used at an earlier stage. This issue was raised in the study of Simon et al. (2001) that early effective treatment for depressed patients in primary care assist in reducing costs for treating depression as chronic illness. Improving outcomes of depression treatment in primary care requires investment of additional resources, but the return on this investment is comparable to that of many other widely accepted medical interventions.

This study provided evidence to support that combined treatment using a cognitive therapy framework with brief intervention processes and social support was a feasible, practical, and effective approach in reducing depressive symptoms among mild to moderate depressed adolescent students in the Thai context. As is widely known, depression is caused by cognitive distortions (Beck et al., 1979) and lack of social support (Heino et al., 2001; Piper et al., 2002; Stice et al., 2004). Therefore, the

uniqueness of this treatment is that it focuses on both the individual and support environment, whereas, other treatments focus on either the individual or the supportive environment.

### *Summary*

This study indicated a high correspondence between Thai adolescent students' mental health benefits from the brief cognitive-support treatment and the perception of treatment effectiveness by the adolescent students, their parents/guardians, and their teachers as a feasible, appropriate and effective treatment. Brief cognitive-support treatment for depression does not demand additional resources but can be effective in reducing mild to moderate symptoms of depression in Thai adolescent students who, if left untreated, may be at increased risk of severe depression. It also provides further support for the use of affirmations as a way to improve depressive symptoms in at-risk Thai adolescents. Thus, it is important for practitioners to truly understand the evidences of these treatments and the importance of the participants' perceptions of treatment effectiveness, how they should be used with depressed adolescents, and how to fill gaps for working with adolescent populations.