

Effectiveness of the BAND Intervention Program on Thai Adolescents' Sense of Belonging, Negative Thinking and Depressive Symptoms

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Abstract: This randomized controlled trial sought to examine the effectiveness of the 14-hour *Belonging against Negative Thinking and Depression* (BAND) intervention program on Thai adolescents' sense of belonging, for mild to moderate depression, negative thinking and depressive symptoms. Cognitive behavioral and interpersonal approaches were integrated in constructing the intervention program that was designed to develop interpersonal skills and modify the adolescents' negative thoughts. The sample included 60 Thai high school students, with mild to moderate depressive symptoms, who were randomly assigned to either the intervention (n=30) or control (n=30) group. Those assigned to the intervention group participated in 14, one-hour sessions over seven weeks.

The results revealed subjects in the intervention group, compared to those in the control group, had an increased sense of belonging, decreased negative thinking and decreased depressive symptoms. The findings support the effectiveness of the theory-based intervention in reducing depressive risk factors among Thai adolescents. Thus, community and mental health nurses are encouraged to apply the intervention program to high school students as a means of potentially preventing and/or reducing the rate of depression among Thai adolescents.

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Introduction

The World Health Organization (WHO) has predicted depression will be the second most common cause of global morbidity and mortality by 2020.¹ Furthermore, prior research has revealed depression among Western adolescents is highly related to suicide risk, with 33% to 50% of depressed teens experiencing suicidal ideations.² In Thailand, depression among adolescents has been recognized as a significant health problem with 18% to 69% of adolescents having depressive symptoms,³⁻⁶ and approximately 60% of teens diagnosed with depression experiencing suicidal ideation.⁶

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Although early detection and treatment for depression may improve mental health and social well-being of adolescents, depression during adolescence often goes unrecognized and untreated.⁷ Over 70% of Western teens with depression have not seen a mental health professional for treatment,⁸ and only 16% of those with depression have received adequate treatment.⁹ In Thailand, less than 5% of teens with depression have received adequate treatment.¹⁰ It has been shown the longer depression goes untreated, the more difficult it is for adolescents to recover from depression and the more adversely the depression effects their psychological and social functioning.¹¹ Therefore, there appears to be an urgent need, in Thailand, for an intervention program to decrease the risk of depression among adolescents.

Depression in adolescents has been recognized as being multi-dimensional and having multi-causal etiology, including cognitive and interpersonal factors.¹² The cognitive factors include negative thinking,^{4,13} maladaptive attributional style¹⁴ and maladaptive coping styles,¹⁵ while the interpersonal factors consist of low sense of belonging,¹⁶ interpersonal conflict,¹⁶ and poor communication and problem-solving skills.¹⁷ Interaction among these risk factors is believed to contribute to an increased likelihood of depression.¹⁸ Therefore, targeting both cognitive and interpersonal risk factors should be effective in preventing clinical depression in adolescents.¹⁷⁻¹⁹ However, existing treatment interventions have been developed separately and the treatment foci have been based exclusively on a particular framework. For example, cognitive behavior therapy (CBT) focuses solely on cognitive risk factors,²⁰ whereas interpersonal psychotherapy (IPT) centers on social and interpersonal factors.²¹ Thus, to simultaneously tackle cognitive risk factors and strengthen interpersonal protective factors of adolescents with depression, the investigators, in this study, chose to develop a 14-hour *Belonging against Negative Thinking and Depression* (BAND) intervention program based on an integrated framework

between cognitive-behavioral and interpersonal approaches.

Review of Literature

Prior research has suggested the significant issues, related to depression among Thai adolescents, include intrapersonal, interpersonal and contextual risk factors.³⁻⁵ These factors are similar to those found in Western cultures and consist of: negative thinking;^{4,13} a sense of belonging;¹⁶ social support;¹⁶ self-esteem;^{4,13} coping styles;²² stressful life events; and, parenting styles.^{4,13} However, since they mediate the effects of other risk factors of depression, negative thinking and sense of belonging have been shown to be proximal predictors of depression.^{4,16, 23}

Negative thinking is a disturbance of thought content and process, and includes negative views of self, the world and the future.²⁰ Negative thinking has been identified as a significant predictor of depressive symptoms among adolescents and found to mediate the effect of psychosocial factors, i.e. self-esteem and parental bonding, on depressive symptoms in Western and Thai adolescents.^{4,13} Moreover, change in negative thinking mediates the effect of preventive interventions in reducing depressive symptoms.²⁴

A sense of belonging has been defined as "the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment."^{25, p.173} Thus, a sense of belonging is recognized as one of the significant social competencies that help establish and promote meaningful interpersonal relationships with others. A deficit in a sense of belonging has been considered to be a precursor of depression.^{16, 23} In addition, a low sense of belonging has been found to be a stronger predictor of depressive symptoms than is social support, and a mediator of the effects of social support and interpersonal conflict on one's level of depression.¹⁶

While therapeutic foci of most well-developed interventions for depression have been confined within a particular theoretical approach, recently developed interventions, i.e. BOOT STRAP, have targeted at-risk factors identified by more than one theoretical framework. Through implementation of cognitive-behavioral strategies that alter negative thinking, coping skills and interpersonal techniques, and promote a sense of belonging and peer relationships, BOOT STRAP has been shown, in Navy recruits, to: improve training performance; reduce attrition, by decreasing depressive symptoms and interpersonal difficulties; and, increase coping skills.²⁶

Considering the intervention effect size, the effectiveness of this kind of intervention is promising. Interventions based on a cognitive-behavioral approach have yielded a small to moderate effect size (-0.06 to 0.41),^{17, 19} whereas those based on an interpersonal approach have generated a large effect size (1.5).²⁷ Given a larger effect size occurred within a predominantly female (85.4%) population, use of an interpersonal approach might be more effective with female adolescents who have interpersonal and social domain risk factors.²⁷ In addition, although the effect size of integration of a cognitive and interpersonal approach has been shown to be 0.39,²⁸ integration of cognitive and interpersonal approaches, particularly with respect to the Theory of Human Relatedness (THR), have not been explored.

Prior studies have examined various interventions for the purpose of reducing depressive symptoms in Thai adolescents. However, the research, predominantly, has focused on: group counseling;²⁹ rational emotive behavior therapy;³⁰ and, brief cognitive-support.³¹ In addition, most have used a quasi-experimental design,²⁹⁻³¹ with limitations related to small sample size^{29, 30} and/or insufficient amount of treatment.²⁹ Additionally, no studies could be located, using combined cognitive behavior and interpersonal approaches in depression intervention

programs for Thai adolescents. Therefore, the purpose of this study, using a randomized control trial design, an appropriate sample size and an integration of cognitive behavioral and interpersonal approaches, was to examine the effect of a 14-hour intervention program (Belonging against Negative Thinking and Depression [BAND]) on the sense of belonging, negative thinking and depressive symptoms of Thai adolescents with mild to moderate depressive symptoms. The hypothesis tested was: adolescents completing the BAND intervention program, when compared to adolescents in a non-treatment control group, would demonstrate a significant increase in a sense of belonging, and a decrease in both negative thinking and depressive symptoms.

Conceptual Framework for Development of the BAND Intervention Program

The BAND intervention program was based on an integrative theoretical framework, consisting of a cognitive-behavioral approach (Beck's Cognitive Model of Depression)²⁰ and an interpersonal approach (Theory of Human Relatedness),³² for the purpose of altering adolescents' thoughts associated with depression and re-establish their interpersonal relatedness to others. Beck contends that individuals' affect and behavior largely is determined by the way one thinks and believes.²⁰ Accordingly, depression appears to result from negative thinking. Beck's model delineates elements that account for the psychological foundation of depression including: cognitive structure (schema, core beliefs or frame of references); cognitive triad (negative views of oneself, the world and the future); and, cognitive distortion (faulty information processing). In addition, Beck recognizes that individuals with negative cognition tend to limit information processing to confirm their negative beliefs and filter out the positive inputs, leading to pessimistic thoughts and a depressed mood. Thus, it

is Beck's contention that in order for adolescents to modify their negative thinking, they need to: recognize the connection between their beliefs, feelings and behavior; become aware of their negative thinking styles; and, challenge their negative thinking, by evaluating the accuracy of their beliefs and generating alternative interpretations.²⁰

The Theory of Human Relatedness (THR) posits, in order to survive, develop and grow, individuals need to establish and maintain relatedness with others.³² According to the THR, interpersonal relatedness can be developed and promoted by significant social competencies, especially a sense of belonging. As may be expected, a lack of a sense of belonging has been found to be associated with adolescents' depressive symptoms.^{16, 25} Since a sense of belonging fosters relatedness, by increasing an individual's self-value and sense of fit in society, as well as mediates the effect of social support on depressive symptoms, it is recognized as a buffer against depressive symptoms.¹⁶ Thus, to promote a sense of belonging, interventions should focus on: generating activities that address the experience of success or being valued; and, developing interpersonal skills for individuals to get in touch and share personal characteristics with others.³²

Method

Design: The study design was a randomized controlled trial (RCT).

Ethical considerations: Prior to implementation, approval to conduct the study was obtained from the Institutional Review Board Committee of the primary investigator's (PI) academic institution and the School Director of the high school used as the study site. All potential subjects received written and verbal explanations about: the purpose of the study; the intervention program; what their involvement would entail; and, confidentiality and anonymity issues.

In addition, they were told they: could withdraw at any time without negative repercussions; needed to share the written information, about the study, with their parents; needed to provide written consent from either of their parents and written assent in order to participate; and, could talk to a counselor after completing the questionnaires used in the study.

Randomized school selection: The study was conducted at a public high school in Bangkok, Thailand. The school was randomly selected, first, from one of the three educational service areas of Bangkok and, then, from all secondary schools in the selected educational service area. Randomization was accomplished via drawing lots from the schools' identification numbers.

Sample: The sample size was determined based on a power analysis and previous drop-out rates. The power analysis was performed with a desired power of .80, significance level of .05 and effect size of 0.77,³³ giving an estimated sample size of 27 adolescents in both the intervention and control group. Based on a previous study's dropout rate, 11% more subjects were added to cover potential attrition.³⁴ Therefore, the sample consisted of a total of 60 subjects, with 30 in both the intervention and control group. None of the subjects dropped out during the study.

The PI obtained the names of 84 potential subjects from a teacher who served as a guidance counselor. The selection criteria included being a high school student with: mild to moderate depressive symptoms (Center for Epidemiological Studies-Depression Scale score of 16 to 29); no history of major depressive disorder; no history of mental illness, attempted suicide, substance abuse/addiction, game addiction or utilization of mental health services; no physical or cognitive disability; ability to verbally communicate; and, willingness to participate. Potential subjects were excluded if they could not attend more than one intervention session. Three of the 84 potential subjects were excluded (2 with CES-D score > 30; one

with major depressive disorder). From the 81 eligible subjects, 60 were randomly selected and assigned to either the intervention group ($n = 30$) or control group ($n = 30$). Detailed information regarding the demographic characteristics of the sample, intervention group and control group are shown in **Table 1**. Except for the members of the intervention group being slightly older than those in the control group, no significant demographic or health history differences were noted between the two groups.

Instruments: Five instruments were used, including the: a) *Student Information Form (SIF)*; b) *Center for Epidemiological Studies-Depression Scale (CES-D)*;³⁵ c) *Structured Clinical Interview for DSM-IV (SCID)*;³⁶ d) *Sense of Belonging Instrument (SOBI-P)*;³⁷ and, e) *Crandell Cognitions Inventory*

(CCI).³⁸ The *Student Information Form (SIF)* was developed by the PI. All other instruments were a Thai translated version of the English version of the respective instrument. Approval to use the copyrighted instruments was obtained from the author(s) of the respective instruments, as well as from those who had originally translated the English version of each instrument into Thai. A pilot test of all of the instruments was conducted with 30 adolescents, who were similar in age to the study subjects, to determine if the instruments, and each set of directions, were clear and understandable. No changes were made to the instrument packet.

The *Student Information Form (SIF)* was a 7-item form used to obtain data regarding each subject's: age; gender; grade average (GPA); history

Table 1 Characteristics of the Sample, Intervention Group and Control Group

Variables	Sample (n=60)	Intervention Group(n=30)	Control Group (n=30)	t-test	χ^2 -test	p
Age						
16	17 (28.3%)	3 (10.0%)	14 (46.7%)	2.64		.01
17	33 (55.0%)	21 (70.0%)	12 (40.0%)			
18	10 (16.7%)	6 (20.0%)	4 (13.3%)			
(Mean, SD)	(16.9, 0.67)	(17.1, 0.55)	(16.7, 0.71)			
Gender						
Male	31 (51.7%)	16 (53.3%)	15 (50.0%)		.07	.80
Female	29 (48.3%)	14 (46.7%)	15 (50.0%)			
Grade Level						
GPA < 2.75	28 (46.7%)	18 (60.0%)	10 (33.3%)	-1.69		.10
GPA > 2.75	32 (53.3%)	12 (40.0%)	20 (66.7%)			
(Mean, SD)	(2.71, 0.57)	(2.59, 0.54)	(2.85, 0.59)			
Student illness						
No illness	54 (90.0%)	27 (90.0%)	27 (90.0%)		4.00	.26
Physical illness						
- Headache	2 (3.3%)	2 (6.7%)	0 (0.0%)			
- Stomachache	4 (6.7%)	1 (3.3%)	3 (10.0%)			
Mental illness	0 (0.0%)	0 (0.0%)	0 (0.0%)			

Table 1 Characteristics of the Sample, Intervention Group and Control Group (Continued)

Variables	Sample (n=60)	Intervention Group(n=30)	Control Group (n=30)	t-test	X ² -test	p
Family illness						
No illness	47 (78.3%)	22 (73.3%)	25 (83.3%)		.88	.35
Physical illness	13 (21.7%)	8 (26.7%)	5 (16.7%)			
Mental illness	0 (0.0%)	0 (0.0%)	0 (0.0%)			
History of drug use						
No drug use	55 (91.6%)	27 (90.0%)	28 (93.3%)		1.02	.60
Alcohol use	4 (6.7%)	2 (6.7%)	2 (6.7%)			
Alcohol & Cigarettes	1 (1.7%)	1 (3.3%)	0 (0.0%)			
Frequency of drug use						
Never	55 (91.6%)	27 (90.0%)	28 (93.4%)		2.87	.24
Sometimes	4 (6.7%)	3 (10.0%)	1 (3.3%)			
Always	1 (1.7%)	0 (0.0%)	1 (3.3%)			
History of game addiction						
Never	2 (3.3 %)	1 (3.3%)	1 (3.3%)		3.01	.39
Sometimes	41 (68.4%)	23 (76.7%)	18 (60.0%)			
Often	15 (25.0%)	6 (20.0%)	9 (30.0%)			
Always	2 (3.3 %)	0 (0.0%)	2 (6.7%)			

Note: SD=Standard Deviation

of physical and mental illness; family history of physical and mental illness; history and frequency of drug use; and, history of game addiction. It took approximately 1 minute to complete the SIF.

The *Center for Epidemiological Studies-Depression Scale (CES-D)*³⁵ was used to measure each subject's level of depressive symptoms. The CES-D is a 20-item, Likert-type, scale used to screen individuals at risk for depression, by assessing the frequency and duration of depressive symptoms. Examples of the CES-D items are: "I was bothered by things that usually don't bother me;" and, "I had crying spells." Respondents are asked to choose from four possible responses, where 0 = "rarely or none of the time (less than 1 day)" to 3 = "almost or all of the time (5-7 days). Four items are reverse-coded for establishing scores. A total depression score (range

= 0 to 60) is obtained by summing across each item score. Higher scores reflect a greater level of depressive symptoms. A score of 16-29 indicates mild to moderate depressive symptoms, while scores greater than 30 suggest major depression.³⁹ In this study, only those with a score of 16-29 were considered eligible to participate. The CES-D has been tested in various settings and found to have a high internal consistency and adequate test-retest reliability.³⁵ The Thai translated version of the CES-D, used in this study, has been found to have a Cronbach's alpha of 0.86.⁴⁰ In this study, the Thai translated version of the CES-D had a Cronbach's alpha of 0.92.

The *Structured Clinical Interview for DSM-IV (SCID)*³⁶ is a semi-structured interview guide that is completed by a respondent and used to determine the person's DSM-IV diagnosis. The Thai version

of the 9-item major depressive episode component of the mood episode module of the clinical version (SCID-I) of the SCID was used in this study to determine whether potential subjects had a major depressive disorder.²³ Examples of the items are: “In the past month...has there been a period of time when you were feeling depressed or down most of the day, nearly every day?”; “If yes, how long did it last?”; and, “What was that like?” Prior studies have found the Thai version of the SCID-I to have Cohen Kappa inter-rater reliabilities of 0.61 (test-retest design) and 0.80 (joint-interview method).⁴¹ The joint-interview inter-rater reliability, between the PI and a psychiatrist, of the Thai version of the SCID-I, in this study, was found to be 100%.

The *Sense of Belonging Instrument, Psychological* (SOBI-P)³⁷ was used to measure the subjects' sense of belonging. The English version of the SOBI-P is an 18-item self-report instrument used to measure subjects' sense of being valued and sense of fitting in an interpersonal relationship. Examples of items on the SOBI-P are: “I feel out of place in society;” and, “I feel as if I mean nothing to my friends.” The Thai translated version of the SOBI-P, used in this study, consisted of 16 rather than 18 items.²³ Two items in the English language version of the SOBI-P (“I feel like a piece of a jig-saw puzzle that doesn't fit into the puzzle;” and, “I feel like a square peg trying to fit into a round hole.”) were removed from the Thai version because 40% of previous Thai respondents had difficulty understanding them.²³ After one of the items was reserve coded, each of the 16 items were scored on a 4-point Likert-type scale of 1 = “strongly agree” to 4 = “strongly disagree.” A total score for the Thai version of the SOBI-P, which can range from 16 to 64, was calculated by summing across each item, with higher total scores suggesting a higher sense of belonging. Prior research has shown the SOBI-P to have a content validity index of 0.83, a test-retest reliability of 0.84 and Cronbach's alpha coefficients of 0.91 and 0.93.³⁷ The Cronbach's alpha

of the 16-item, Thai, SOBI-P has been found, in prior research, to be 0.89.²³ The Cronbach's alpha of the Thai SOBI-P, in this study, was 0.84.

The *Crandell Cognitions Inventory* (CCI)³⁸ was used to evaluate subjects' negative thinking. The CCI is a 45-item, self-report, Likert-type scale, wherein 34 of the items are negative self-statements and 11 are buffer items. The negative self-statement items are used to assess each subject's negative thinking. Examples of items on the CCI include: “Nothing ever works out for me anymore;” and, “I'm a burden to my family.” Possible responses to each of the items range from 1 = “almost never” to 5 = “almost always.” Prior studies have found the Cronbach's alpha of the CCI to be 0.95 and its construct validity, when compared to the Beck Depression Inventory, to be 0.79.³⁸ The Thai translated version of the CCI,⁴ used in this study, has been shown to have a Cronbach's alpha of 0.95. The item-total correlation of the Thai version of the CCI, in this study, was 0.23 – 0.82, except for one item (“I don't even feel like going out of the house.”) that had an item-correlation of 0.10. As a result, this item was excluded from analysis. Thus, 44 items (33 negative self-statements and 11 buffers) were analyzed. The total score for the Thai version of the CCI (minus the one omitted item), obtained by summing each negative self-statement item, could range from 33 to 165. Higher scores suggest increased frequency of negative thinking. The Cronbach's alpha for the CCI, in this study, was 0.97.

Intervention: The PI developed the 14-hour, BAND Intervention, Program with a leader manual that delineated the program's content, strategies and sequence of learning activities. The program consisted of 14, one-hour, sessions. Two sessions were offered each week over seven weeks. The program's feasibility was examined for content validity by three experts, including a: nursing faculty member with clinical experience and skills in cognitive behavioral strategies; and, a guidance counselor and a psychologist, who were experts in conducting mental health interventions with

adolescents. In accord with the experts' suggestions, the program and leader manual were revised. For example, the sequence of each session was adjusted and changes were made in the learning activities so as to be more easily understood and fit within a one-hour timeframe. Each session of the program, through use of the leader's manual, was tested for clarity, comprehensibility and feasibility of the instructions, via a pilot test with ten college students. As result of the pilot study, the exercise for the problem-solving session was revised so the problem-solving steps were more understandable.

The three central components of the BAND intervention program involved: developing a sense of belonging; modifying negative thinking; and, other beneficial activities, i.e. problem-solving skills, relaxation techniques and thought stopping. The program details are presented in **Table 2**.

Procedure: Once approval was obtained to conduct the study, the PI approached 367 students enrolled in the 10th to 12th grades, of the selected school, who were in a guidance counseling class. The students were informed about the study and related ethical considerations. Those who expressed interest in the study were given a packet containing all of the study instruments, a parental consent form and a student assent form, and asked to return the completed instruments, signed consent form and signed assent form to the guidance teacher within the next 3 days. A total of 197 students returned their signed consent and assent forms, and completed the questionnaires. Although 113 of the students did not have symptoms of depression, three of them revealed symptoms of major depression. The contents for the questionnaires revealed 81 students met the study's inclusion criteria. The PI gave the names of the students who appeared to have a major depression to the guidance counselor teacher for counseling and/or referral.

From the 81 students who met the inclusion criteria, 60 were randomly selected and assigned to either the intervention group ($n = 30$) or control group

($n = 30$). So more effective participation could take place during the offering of the BAND intervention program, the 30 students assigned to the intervention group were randomly reassigned to one of two groups of 15 each. The PI and two trained research assistants (RA) presented the program, in the school's guidance classroom, over a seven-week period. One of the RAs conducted the beginning activities, which encouraged student involvement, while the other RA helped the PI facilitate the students' sharing of experiences within a group setting. To reduce attrition, the PI telephonically contacted the subjects to remind them of each scheduled session, as well as readjusted the session schedule to conform to their school activities.

Upon completion of the intervention program, subjects in the intervention and control groups were again administered the SOBI-P, CCI and CES-D in the school's guidance classroom. After those in the control group completed the questionnaires, they were offered attendance in any of the available extracurricular activities (i.e. Thai dance club and music club), as well as the same intervention activities provided to those in the intervention group. Fifteen members of the control group chose to participate in the BAND intervention program 14 days after completion of their school day. In addition, the 21 students who met the inclusion criteria, but were not chosen to participate, were offered attendance in any of the school's extracurricular activities.

Data Analysis: Descriptive statistics were used to assess the demographic characteristics, as well as calculate the results of the CES-S, SOBI and CCI. Differences between the demographic and health characteristics, of the members of the intervention and control groups, were evaluated by way of independent t-test and chi-square test.

MANOVA was used to investigate the effectiveness of the BAND intervention on the subjects' levels of sense of belonging, negative thinking and depressive symptoms. A p-value of .05 or less was set, a priori, to declare statistical

Table 2 Schedule, Content and Teaching Strategies of the BAND Intervention Program

Week/Session	Contents	Teaching Strategies
<u>Week 1</u>		
Session 1	<ul style="list-style-type: none">- Introducing the program.- Developing rapport and trust.- Learning basic skills for developing relationships.	<ul style="list-style-type: none">- Carry out an “ice-breaking” exercise.- Describe objectives & outline of the program.- Engage in a group activity to learn basic skills for developing relationships.- Engage in group sharing about what has been learned and how relationships are important.
Session 2	<ul style="list-style-type: none">- Building a sense of belonging.- Diminishing the feeling of being an outsider.	<ul style="list-style-type: none">- Engage in a group activity to build a sense of belonging.- Discuss how to appreciate the value of being together and being part of a group.- Engage in group sharing of feelings about being an outsider and how to reconnect with others. <p><u>Homework assignment 1:</u> Record your feelings, when among other people, about being valued/accepted and fitting in or being an outsider.</p>
<u>Week 2</u>		
Session 3	<ul style="list-style-type: none">- Increasing self-awareness and developing a sense of self-value.- Receiving positive feedback.- Developing trust and friendly relationships.- Enhancing self-value.	<ul style="list-style-type: none">- Carry out an exercise to explore and disclose one’s positive characteristics.- Identify, write down, and share positive characteristics of each group member.- Share feelings about being valued and having friendly relationships with group participants.- Engage in group sharing about the results of homework assignment 1, especially how to reconnect with others.
Session 4	<ul style="list-style-type: none">- Examining individual differences.	<ul style="list-style-type: none">- Engage in a group activity that involves observation of differences among garden trees and then compare these difference to human beings.- Recognize individual differences and understand that beyond the differences are similarities.- Practice how to look at the positive side of people and see their merits.- Engage in group sharing about what was learned during this session. <p><u>Homework assignment 2:</u> List positive comments you have given, throughout the week, to your friends, teachers and family members.</p>

Table 2 Schedule, Content and Teaching Strategies of the BAND Intervention Program (Continued)

Week/Session	Contents	Teaching Strategies
Week 3 Session 5	- Distinguishing thoughts from facts. - Engaging in two-way communication.	- Engage in a dyad activity to identify what one sees and what one thinks. - Engage in group sharing about how to identify and distinguish thoughts from facts. - Engage in group sharing about what you have learned about thoughts and facts, and how to verify them. - Engage in group sharing about the results of homework assignment 2 by verbalizing positive statements given to others, during the week, and describe how these statements effect your feelings, behaviors and relationships with others.
Session 6	- Using constructive and destructive communication.	- Discuss and demonstrate constructive and destructive communication. - Engage in role playing to practice constructive and destructive communication. - Engage in group sharing about what one learned about the two types of communication and how they influence one's feelings and relationships with others. <u>Homework assignment 3:</u> Record, throughout the week, constructive and destructive communications you had with others.
Week 4 Session 7	- Accepting the truth. - Using positive thinking.	- Engage in a group activity to learn how to accept positive and negative sides of one's life. - Identify the valuable characteristics of what one possesses. - Practice how to look at the positive side of things. - Engage in group sharing about what you have learned about positive thinking and how it influences one's feelings, behaviors and relationships with others. - Engage in group sharing about homework assignment 3 by discussing how many destructive communications you carried out with others, during the week, and how you altered communications to be more constructive.

Table 2 Schedule, Content and Teaching Strategies of the BAND Intervention Program (Continued)

Week/Session	Contents	Teaching Strategies
Session 8	<ul style="list-style-type: none">- Connecting thoughts, feelings and behaviors.- Identifying and distinguishing between thoughts and feelings.	<ul style="list-style-type: none">- Discuss the linkage among thoughts, feelings and behaviors.- Practice how to identify and distinguish between thoughts and feelings.- Engage in a group exercise to understand the effects of thoughts on feelings and behaviors, and how to modify negative thoughts.- Engage in group sharing about what you learned from this session. <p><u>Homework assignment 4:</u> Identify how thinking influenced your feelings and behaviors, and practice how to modify your negative thoughts.</p>
<u>Week 5</u>		
Session 9	<ul style="list-style-type: none">- Identifying the characteristics of negative thinking.- Identifying the consequences of negative thinking.- Learning how to challenge one's thoughts.	<ul style="list-style-type: none">- Describe the characteristics of negative thinking.- Identify your negative thinking and its consequences on your feelings and behaviors.- Practice how to challenge negative thoughts.- Engage in group sharing about the types of negative thoughts you have, the consequences they impose, and how to modify them.- Engage in group sharing about homework assignment 4 by discussing how to alter negative thinking and the results it brings.
Session 10	<ul style="list-style-type: none">- Identifying the advantages and disadvantages of negative thinking.- Learning how to challenge negative thoughts.- Learning thought stopping techniques.	<ul style="list-style-type: none">- Engage in group “brainstorming” about the advantages and disadvantages of negative thinking.- Practice how to think positively and to find alternative thoughts to challenge negative ones.- Discuss and practice thought stopping techniques.- Engage in group sharing about the drawbacks of negative thinking and how to challenge negative thoughts. <p><u>Homework assignment 5:</u> Practice thought stopping, during the week, and then list how satisfying it was and what obstacles you faced during the thought stopping practice.</p>

Table 2 Schedule, Content and Teaching Strategies of the BAND Intervention Program (Continued)

Week/Session	Contents	Teaching Strategies
<u>Week 6</u> Session 11	- Identifying stressful situations and their related negative emotions and behaviors.	<ul style="list-style-type: none">- Engage in a group activity to be able to identify stressful situations and related negative emotions.- Engage in self-exploration of one's stressful situations, negative emotions and their consequences.- Engage in group sharing about what was learned in this session, how much stressful situations and negative emotion impact one's life, and how to manage stress and negative emotions.- Engage in group sharing about homework assignment 5 regarding the difficulties encountered when using thought stopping techniques, what obstacles existed related to thought stopping, and how you dealt with these obstacles. <p>Homework assignment 6: Identify your stressful situations and their impacts, strategies you used to respond to stress, and the consequences of the strategies you used.</p>
Session 12	- Learning relaxation techniques.	<ul style="list-style-type: none">- Discuss and practice several types of relaxation techniques: physical exercise, breathing exercise, muscle relaxation exercise, meditation, and massage.- Engage in group sharing about what you learned during the session and how you feel when taking part in relaxation techniques.- Engage in group sharing about homework assignment 6 regarding one's identification of stressful situations and their impact, strategies used to respond to stress and the consequences of the strategies you used.
<u>Week 7</u> Session 13	- Learning effective problem solving strategies.	<ul style="list-style-type: none">- Identify situations that are always stressful.- Engage in group sharing about stressful situations and strategies one uses to solve stress related problems.- Discuss emotional and problem-focused coping techniques and their consequences.- Separate the students into 2 groups and ask them to select the most common stress-related situation for group discussion.

Table 2 Schedule, Content and Teaching Strategies of the BAND Intervention Program (Continued)

Week/Session	Contents	Teaching Strategies
session 14	<ul style="list-style-type: none"> - Reflecting on what was learned and how to apply in one's life, - Expressing, constructively, feelings and behaviors. 	<ul style="list-style-type: none"> -Distribute the Effective Coping Strategies document and have both groups brainstorm about: coping strategies to solve the stress – related situation they selected; the positive and negative consequences of the coping strategies they used; selecting the best coping strategies; and, sharing what they learned from the session. Homework assignment 7: Observe your stress and ask: How does it occur?; What are the consequences?; and, How do I solve the problem? - Engage in group sharing about homework assignment 7 regarding how to effectively resolve stress-related problems. - Reflect on what you learned from participating in the BAND intervention. Make a pledge to apply what you learned from the program to your life. - Practice expressing, constructively, your feelings and behavior, thinking positively, properly expressing gratitude and apologize. - Carry-out program summarization regarding: main concepts presented in the program; how to connect with others; how to eliminate negative thoughts; and how to practice and apply what was learned to daily life.

significance. Although a significant difference in age was found between subjects in the intervention and control groups at baseline, “age” did not meet the criteria of covariates in analysis of covariance.⁴² Thus, “age” was not included in the analysis.

Results

Upon comparison, no statistical difference was found between the mean scores of the outcome variables in the intervention and control groups at baseline (sense of belonging: $t=.55$, $df=58$, $p=.58$; negative thinking: $t=.21$, $df=58$, $p=.84$; and

depressive symptoms: $t=-1.69$, $df=58$, $p=.10$). The post-intervention analysis, including the multivariate analysis of variance of mean differences of the outcome variables and the calculation of intervention effect size, is reported in **Table 3**.

The intervention group experienced changes in the mean scores of sense of belonging, negative thinking and depressive symptoms. Adolescents receiving the BAND intervention, compared with those in the control group, significantly increased their sense of belonging, and decreased their negative thinking and depressive symptoms.

Table 3 Mean, Standard Deviation, and Multivariate Analysis of Variance of Mean Difference Scores of the Outcome Variables

Outcome Variables	Intervention Group (n=30)			Control Group (n=30)			F-Stat.	ES
	Pretest Mean(SD)	Posttest Mean(SD)	Mean Diff (SD)	Pretest Mean(SD)	Posttest Mean(SD)	Mean Diff (SD)		
Sense of Belonging	46.10 (4.54)	47.07 (4.93)	.97 (6.62)	45.47 (4.36)	42.20 (5.61)	-3.27 (5.05)	7.75*	0.87
Negative Thinking	75.40 (15.80)	71.63 (16.72)	-3.77 (16.58)	74.57 (15.15)	79.63 (17.17)	5.07 (11.79)	5.66*	-0.47
Depressive Symptoms	19.23 (2.78)	16.83 (5.71)	-2.90 (5.29)	20.60 (3.44)	22.20 (5.10)	1.60 (4.30)	13.05**	-1.15

Note: * $p < .05$; ** $p < .01$

ES (Effect size) = [Mean of experimental group] – [Mean of control group]

Control group standard deviation

Diff. = Difference

SD = Standard Deviation

Stat. = Statistic

The effect size was calculated and interpreted using Cohen's classification of three effect size values (0.2 for small, 0.5 for medium and 0.8 for large).⁴³ For the current study, the effect size was large for sense of belonging (0.87), medium for negative thinking (-0.47) and large for depressive symptoms (-1.15).

Discussion

The findings support the hypothesis that Thai adolescents completing the BAND intervention program (an integration of cognitive and behavioral approaches), when compared to adolescents in a non-treatment control group, would demonstrate a significant increase in a sense of belonging, and a decrease in both negative thinking and depressive symptoms. These results are congruent with those of previous studies wherein cognitive behavioral

therapy were found to decrease negative cognition and attenuate the association between negative cognition and depressive symptoms.³¹ This study's results also are consistent with prior findings that reveal the combination of cognitive behavioral strategies and interpersonal techniques increase a sense of belonging and problem-solving coping skills.²⁶

The current study's effect size on reducing depressive symptoms in adolescents was -1.15, which is considered larger than effect sizes found from a review of meta-analyses on the effectiveness of cognitive behavioral therapy in adolescent depression (ES = 0.77; 95% CI = 0.44 -1.10).^{19, 33} Three factors may have contributed to generating the high effect in reducing depressive symptoms, including the: integration of two theoretical frameworks; order of the session activities; and, homework assignments.

Integration of the two theoretical frameworks and the multi-intervention foci made the current intervention powerful in reducing depressive symptoms in adolescents at risk. As negative thinking and a sense of belonging were hypothesized to be proximal to development of depression in adolescents, an attempt to simultaneously influence these factors most likely contributed to reduction of the adolescents' depressive risk factors.

The relationship between enhancing sense of belonging and modifying negative thinking appeared to facilitate alleviation of depressive symptoms in the cohort of Thai adolescents in this study. Positive interpersonal experiences were set up to promote feelings of being valued and fitting into society, as well as to promote interpersonal connectedness to others. The exchange and sharing of perceptions about self and others, in a trusting and caring atmosphere, provided opportunities for obtaining coping resources and psychological support. As noted in prior research, promoting a sense of belonging, in depressed individuals, facilitates social network reconnections that can lead to a decrease in depressive symptoms.^{25, 26} When negative core beliefs were modified and new cognitive templates were established, the adolescents, in this study, appeared to recognize, in a more logical fashion, their self-value and perceived stressors. When faced with new stressful events, they were able to perceive situations more precisely by viewing adverse situations with a positive perspective. Although the increment size of the sense of belonging scores, in the intervention group, was not large, the adolescents shared their experiences, which demonstrated clinical significance by an increase in a sense of belonging and a decrease in negative thinking and depressed mood.

The control group adolescents, who did not receive the BAND intervention, appeared to have an increase in their depressive symptoms, as noted by their pre-test and post-test scores (see Table 3). This suggests that students with depressive symptoms are at a particularly high risk of developing depression,

unless preventive interventions, such as the BAND intervention, are provided.

In terms of session order, the early sessions of the BAND intervention aimed to develop and strengthen a sense of belonging, while modification of negative thinking and other beneficial activities were emphasized in later sessions. This sequence appeared advantageous, as it set up the bonding and motivation essential for disclosure of personal concerns and negative thoughts. Being equipped with communicating skills and self-awareness, the subjects were prepared to learn about thoughts and feelings that tended to be abstract and often difficult to understand. The trusting and accepting group relationship, formed in the early sessions, appeared to facilitate the subjects' genuine expression of thoughts and feelings. The sharing they did, in the early sessions, regarding their negative thoughts and feelings about belonging to the group, appeared to have assisted them in obtaining more meaningful support from their peers. Thus, the arrangement of activities to develop and strengthen a sense of belonging, in the early sessions, and to modify negative thinking, in later sessions, appeared to have been advantageous.

The homework assignments were another factor that appeared to have contributed to the effectiveness of the BAND intervention. The seven homework assignments seemed to enable the subjects to apply, to real life situations, what they learned from the BAND intervention. The activities encouraged them to observe, record and share their thoughts, feelings and behaviors, which were the result of their life events, and to modify their negative thoughts. In addition, the homework assignments appear to have facilitated an increase in their self-confidence to connect with others and to have a sense of belonging. The homework assignments, therefore, appeared to have contributed to an increase in their sense of belonging and a decrease in their negative thinking, leading to a reduction in their depressive symptoms.

Contrary to prior studies that have had drop-out rates of 10.9 – 21.7 %.,^{34, 44} no attrition occurred during this study. This may have been due to the ice-breaking activities that occurred during the beginning of each session. During the first three sessions, it was noted most participants talked about how much they enjoyed the activities. As a result, the research team made certain a three to five minute, age-specific, activity or game prior to the start of each session. These activities appeared to have motivated the subjects to arrive on time for each session. If they came late, they did not have an opportunity to enjoy an exciting activity and only could engage in the respective session content.

In conclusion, the findings supported the preventive effects of the BAND intervention and its application to Thai adolescents at risk of developing depression. Thus, it is imperative for community and mental health nurses to consider incorporating, into their care plan when working with adolescents, interventions that may foster a: sense of belonging; decrease in negative thinking; and, reduction in depressive symptoms.

Limitations and Recommendations

The study's limitations need to be taken into consideration when the results are examined. Since the study's design was not longitudinal, it is not known if there were sustained effects six to 12 months after completion of the BAND intervention. Future studies need to consider use of a longitudinal design to evaluate the effectiveness of the intervention over time.

In addition, the sample was obtained only from public high school students. Thus, the findings cannot be generalized to adolescents attending a private school or not attending school. Future research needs to consider the implementation of the BAND intervention with at-risk adolescents who attend a private school or do not attend school.

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ผลของโปรแกรมป้องกันอาการซึมเศร้า (BAND Intervention Program) ต่อความรู้สึกมีคุณค่าในตนเองและเป็นส่วนหนึ่งของกลุ่ม ความคิดทางลบ และอาการซึมเศร้าในวัยรุ่นไทย

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บทคัดย่อ: การศึกษาครั้งนี้เป็นการวิจัยเชิงทดลอง เพื่อศึกษาประสิทธิภาพของโปรแกรมป้องกันอาการซึมเศร้า (Belonging against Negative Thinking and Depression (BAND) Intervention Program) ต่อความรู้สึกมีคุณค่าในตนเองและเป็นส่วนหนึ่งของกลุ่ม ความคิดทางลบ และอาการซึมเศร้าในวัยรุ่นไทย ครอบแนวคิดของโปรแกรมป้องกันอาการซึมเศร้าในการศึกษาครั้งนี้ เป็นการผสมผสานแนวคิดการปรับความคิดและพฤติกรรมและแนวคิดเกี่ยวกับสัมพันธภาพระหว่างบุคคล เพื่อพัฒนาทักษะระหว่างบุคคลและปรับเปลี่ยนความคิดทางลบ

กลุ่มตัวอย่างเป็นนักเรียนระดับชั้นมัธยมศึกษาตอนปลายที่มีอาการซึมเศร้าเล็กน้อยถึงปานกลางจำนวน 60 คน ล้วนเป็นกลุ่มทดลอง 30 คน และกลุ่มควบคุม 30 คน กลุ่มทดลองเข้าร่วมกิจกรรมสัปดาห์ละ 2 ครั้ง ๆ ละ 1 ชั่วโมง รวม 14 ครั้ง

ผลการศึกษาพบว่า กลุ่มตัวอย่างที่เข้าร่วมโปรแกรมป้องกันอาการซึมเศร้า มีความรู้สึกมีคุณค่าในตนเองและเป็นส่วนหนึ่งของกลุ่มเพิ่มขึ้น มีความคิดทางลบและอาการซึมเศร้าลดลงอย่างมีนัยสำคัญทางสถิติเมื่อเปรียบเทียบกับกลุ่มที่ไม่ได้เข้าร่วมโปรแกรม ผลการวิจัยครั้งนี้แสดงให้เห็นว่า โปรแกรมป้องกันอาการซึมเศร้า (BAND Intervention Program) มีประสิทธิภาพในการลดปัจจัยเสี่ยงต่อการเกิดภาวะซึมเศร้าในวัยรุ่นไทย ดังนั้นควรส่งเสริมให้พยาบาลจิตเวชและพยาบาลอนามัยชุมชนนำโปรแกรมนี้ไปใช้กับนักเรียนมัธยมศึกษา เนื่องจากเป็นเครื่องมือที่มีประสิทธิภาพในการป้องกันและลดอัตราการเกิดโรคซึมเศร้าในวัยรุ่นไทย

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คำสำคัญ: ภาวะซึมเศร้า ความคิดทางลบ ความรู้สึกมีคุณค่าและเป็นส่วนหนึ่งของกลุ่ม วัยรุ่นไทย

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