

Original Article

The Effects of the Resilience-Enhancing Nursing Program on Life Goals Among Pregnant Teenagers: A Randomized Controlled Trial

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Abstract

Currently, teenage pregnancy is a significant problem and social concern. Teenage pregnant women who lack resilience are more likely to face adversity including the risks and complications associated with physical and mental health from a potentially crisis situation of pregnancy. This study aimed to evaluate the effects of the Resilience-Enhancing Nursing Program (RENP) on life goals in pregnant teenagers. A randomized controlled trial was conducted with 130 participants who were pregnant teenagers (experimental group=64, control group=66). The RENP was developed by the researcher and included three steps: step 1: establishing a trusting relationship, step 2: improving the resilience, and step 3: monitoring and encouraging the resilience practice. The instruments for data collection consisted of a demographic data form, the resilience scale and life goals scale. All instruments were content validated by five experts, and reliability was examined using Cronbach's alpha coefficient. Data were analyzed using percentage, mean, standard deviation, Chi-square, independent t-test, and repeated measures ANOVA.

The findings revealed that the mean score of life goals of participants at the 4th week, and 8th week were significantly higher than that before receiving the program ($p < .001$). In addition, the participants in the experimental group had a significantly greater improvement in mean score of life goals than did the control group at the 4th and 8th week ($p = .001$). This program can guide nurses to encourage pregnant teenagers in setting life goals that can improve their quality of life.

Keyword: life goals; pregnant teenagers; resilience; resilience-enhancing nursing program

Introduction

Teenage pregnancy is an important issue for several reasons. The vast majority of teenage pregnancies, about 95%, occur in low and middle income countries.¹ Teenage pregnancy remains a major contributor to maternal and child mortality, and to the cycle of ill-health and poverty.² In developing countries, the rate of teenage pregnancy is 133 births per 1,000, while about 16 million girls, including approximately 1 million girls aged under 15 give birth every year.² Many teenage pregnancies are not merely unplanned but also unwanted, as seen by the estimated 2.2 to 4 million teenage girls who have an abortion each year.¹ Babies born to unmarried adolescent women are more likely to be unintended and the rates of induced abortion are higher for unmarried adolescents.² Thus, teenage pregnancy is an important issue for health care providers.

Pregnant teenagers need to have life goals for planning their future after delivery. They often do not make plans and lack the parenting skills and knowledge essential for maternal role attainment.^{3,4} In addition to the long-term social implications of parenthood in teen mothers, studies have consistently shown that this group have a low educational attainment.⁵ Life goals can contribute to one's health and psychological well being.⁶ A life goal which is specific to pregnant teenagers may lead them to continue education in school, to achieve academic skills, and support them to create meaningful connections and motivations to plan for their success in a career.⁷ Therefore, pregnant teenagers need to develop life goals in the prenatal period so that they can make good decisions and make plans for their future life goals.

Previous studies have focused on developmental psychopathology to help pregnant teens adapt and have positive outcomes.^{8,9} Drawing from evidence-based interventions; transforming stress into resilience, taking responsibility to seek social support, focusing on empowerment to decrease the risks for pregnant

teenagers, motivational planning and life goals, and creating meaningful connections have been used in previous studies to form intervention programs.¹⁰ These interventions can be implemented by nurses to promote resilience in pregnant teenagers and increase well being of mothers and their babies. Few studies have been found which tested interventions that enhance resilience in teenage pregnancy.

Resilience is defined as a universal capacity which allows a person, group or community to prevent, minimize or overcome the damaging effects of adversity.¹¹ Resilience can help pregnant teenagers to overcome adversities from crisis situations such as an unintended pregnancy as well as its accompanying damaging effects. The concept of resilience is strength-based, meaning its focus is on providing supports and opportunities which promote life success.³ Resilience can help teenage mothers set life goals and increase aspirations for a positive future including having higher expectations for parenting and increased educational aspirations and occupational achievement in the future.¹⁰ In addition, encouraging pregnant teenagers to be resilient and to develop life goals will help them overcome adversity and improve their lives. Therefore, increasing resilience in pregnant teenagers may help them overcome life adversities and negative effects of teenage pregnancy. However, no studies of resilience programs have been conducted related to life goals in pregnant teenagers. Therefore, this experimental study aimed to evaluate the effects of a resilience-enhancing nursing program (RENP) on life goals among pregnant teenagers. The results of this study will improve the life goals of pregnant teenagers throughout the prenatal period.

Literature Review

Teenage pregnancy is a complex issue involving many factors including physical, psychological, and social aspects. Increasing resilience in pregnant

teenagers can improve the outcomes and prevent future behavioral problems, poor decision making and psychosocial impacts which may become increasingly threaded in their lives. Resilience is a strength-based concept for promoting opportunities for life success.¹² This definition was used by the International Resilience Project. The findings of this project identified 36 qualitative factors that contribute to resilience. All of these can be categorized into three sources of resilience as follows: I am (inner strength), I have (external support), and I can (interpersonal and problem solving skills).¹¹ Resilience is commonly thought of as the ability to recover from life's adversities and is used more in research and clinical practice¹² but people all over the world understand the concept. Therefore, resilience can help pregnant teenagers to manage adversities arising from crisis situations. In addition, resilience can be used to reinforce positive feelings and beliefs to guide pregnant teenagers to find hope and strength.

Several resilience interventions including counseling approaches, individual case management, enhanced cognitive programs, developing problem-solving and social skills of children and adolescents and school-based programs¹³ have been effective in adolescents and other age groups.⁵ Pregnant teenagers who have life goals are more likely to have increased educational aspirations during pregnancy.¹⁴ However, teenage mothers may also fear that they will lose their jobs or friends, be removed from school or home, or suffer from other negative consequences.¹⁵ The negative consequences impacting on a teenage mother include a poor obstetric outcome and failure to complete their education which leads to socioeconomic problems, such as loss of employment opportunities.^{16,17} Therefore, enhancing resilience in teenage pregnant women during the prenatal period may help to provide many positive physical, psychological, and social outcomes. In this study, the resilience

enhancing nursing program was modified based on the concept of resilience from the literature review and also from evidence-based practice.

Objective

This study aimed to evaluate the effects of a resilience-enhancing nursing program on life goals among pregnant teenagers and on the ability of pregnant teenagers to improve their life goals during the prenatal period.

Methods

Design of Study: A randomized controlled trial with a repeated measures design was used to investigate the effects of the intervention program.

Sample and Setting: The study was conducted at antenatal care clinics of two public hospitals in Northeastern Thailand, both providing similar, standardized antenatal care. Maternal health care in Thailand provides at least four prenatal care visits at a general hospital, and for all women, regardless of age, the antenatal care begins when the women realize they are pregnant. All women were recruited during the period February 2015 to June 2016. In order to assure homogeneity between the experimental and control groups, subjects were matched by using minimized randomization¹⁸ to control variables affecting life goals. Women were selected from all the pregnant teenagers who attended the antenatal care clinic at each hospital and who met the inclusion criteria, which were gestational age <28 weeks and being articulate in the Thai language. Using a medium effect size with a type I error of 5% and a power of 80%, the required sample size was determined to be 64 per group.¹⁹ Women who met the inclusion criteria were randomized to either the intervention or the control group after giving their written informed consent to participate in the study. In the final analysis 130 cases were completed; there were 66 cases in

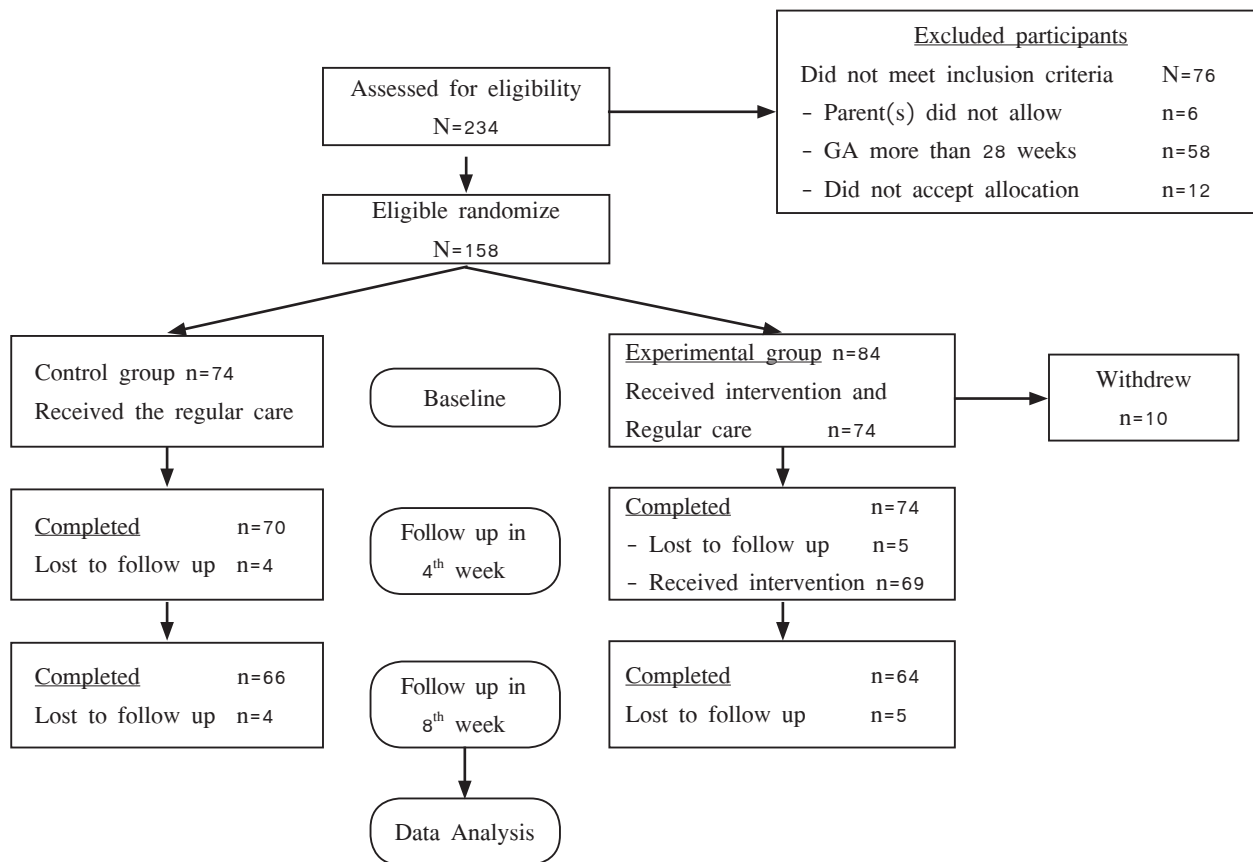


Figure 1 Consort Diagram at Recruitment and Follow up

the control group and 64 cases in the experimental group (Figure 1).

Ethical Considerations: Ethical approval was obtained from the Ethics Research Committee, Faculty of Nursing, Prince of Songkla University, Thailand, and the institutional review board of the two hospitals before collecting the data. Issues of potential concern or harm in regards to the participants either physically or emotionally were kept confidential.

Instruments: The instruments used in this study consisted of instruments for research intervention and the instruments for data collection. The RENP was an instrument for research intervention, while, the instruments for data collection consisted of a demographic data form, and the Resilience Scale and the Life Goals Scale. Content validity and reliability of each instrument were assessed. Details of the instrumentation process are as follows:

Instruments for data collection

1. The Demographic Data Form. This was used to collect demographic data including; participant’s date of birth, age of partner/husband, education level, occupation, total income per month, health care scheme, religion, marital status, partner’s attitude towards having a baby, partner’s responsibility to participant, participant’s living arrangements, and current relationship with partner/husband.

2. The Life Goals Scale. This scale was modified from an instrument used to study the life goals of American high school seniors.²⁰ The original version was used in a study to monitor the future changes in important values, behaviors, and life style orientations of contemporary American youth including, intrinsic and extrinsic life goals.²¹ The original version was translated into Thai and then back translated into English for validation. The Thai scale has 14

life-goal items for pregnant teenagers. There are 25 items for assessing resilience. In this study, the resilience scale was pilot tested for reliability with 30 pregnant teenagers who met the inclusion criteria, and had the same characteristics as the participants in the hospitals where the study was conducted. Cronbach's alpha coefficient was .95. The given answer of life goals of teenage pregnant woman provided the rating score on a 1 to 4 point scale and this scale was indicated in each item.²⁰ The level of life goals, the meaning, and the score of each level were as follows: 1= the statement was not important, 2= the statement was somewhat important, 3= the statement was quite important and 4= the statement was extremely important. The score of 14 items were summed to create total scores that ranged from 14-56. A higher score indicated a higher life goals level. A score of less than 28 was defined as "low level of life goals", a score from 29 to 42 as "normal level of life goals", and a score greater than 42 as "high level of life goals"

3. The Resilience Scale. This tool was developed by Takviriyanan and used to measure resilience factors for Thai adolescents.²² It was developed from the concept of resilience according to Grotberg.¹¹ There are 25 items for assessing resilience. In this study, the resilience scale was pilot tested for reliability with 30 pregnant teenagers who met the inclusion criteria, and had the same characteristics as the participants in the hospitals where the study was conducted. Cronbach's alpha coefficient was .90. All the data collection instruments were reviewed for content validity in order to ensure congruency with the Thai culture. This was done by five experts; four of whom were experts in nursing while the other was a physician working in obstetrics and gynecology. Each item statement has a rating scale, from 1 to 4 associated with four possible responses. The level of resilience, the meaning, and the score of each item level were

presented as follows: 1= not true, 2= partly true, 3= quite true, and 4= completely true. All 25 items were summed to create a total score that ranged from 25 to 100. The categories were divided into three levels of resilience as follows: A score of less than 65 was defined as resilience lower than standard level, a score from 65 to 85 as resilience of standard level, and a score greater than 85 as resilience higher than standard level.

Instruments for research intervention: the instrument for research intervention in this study was the RENP, which refers to a set of nursing interventions for pregnant teenagers that was developed based on the concept of resilience, healing presence and evidence obtained from the literature review. Five experts agreed with the program and suggested that it should offer more explanation of the process of the intervention and the activities in the handbook.

Regular Care: regular care was defined as the usual counseling services and routine care in the hospital system regularly available for both adult and teenage pregnant women. Antenatal care was provided by nurses at the antenatal clinics. The goal was to reduce physical complications during pregnancy. However, care for each teenager was limited to 15-20 minutes per group and given in a maternal health education class. In some cases, problems could be identified and solved directly, giving the teenagers a sense of security.

Data collection: Data collection procedures were conducted in two phases; the preparation phase and the implementation phase. These two phases were presented as follows:

Preparation phase: The preparation phase consisted of the researcher reviewing the literature regarding teenage pregnancy, the resilience concept, and life goals of pregnant teenagers. Permission from the directors of two large hospitals in Thailand, as well as cooperation from health care providers and others related to the participants was sought prior to

conducting the study. Most of the participants came from the outpatient departments of two hospitals, while some came from private clinics and primary care clinics.

Implementation phase: The participants were divided into two groups: the experimental group and the control group. The participants were informed of the objectives of the study, assured of their confidentiality, and of their right to participate

or withdraw from the study at any time without any repercussions. After agreeing to participate in the study, the woman signed the consent forms and was administered the research instruments. The participants in the experimental group completed the entire questionnaire before receiving the program. The resilience-enhancing nursing program was implemented in the experimental group in 3 steps (Figure 2).

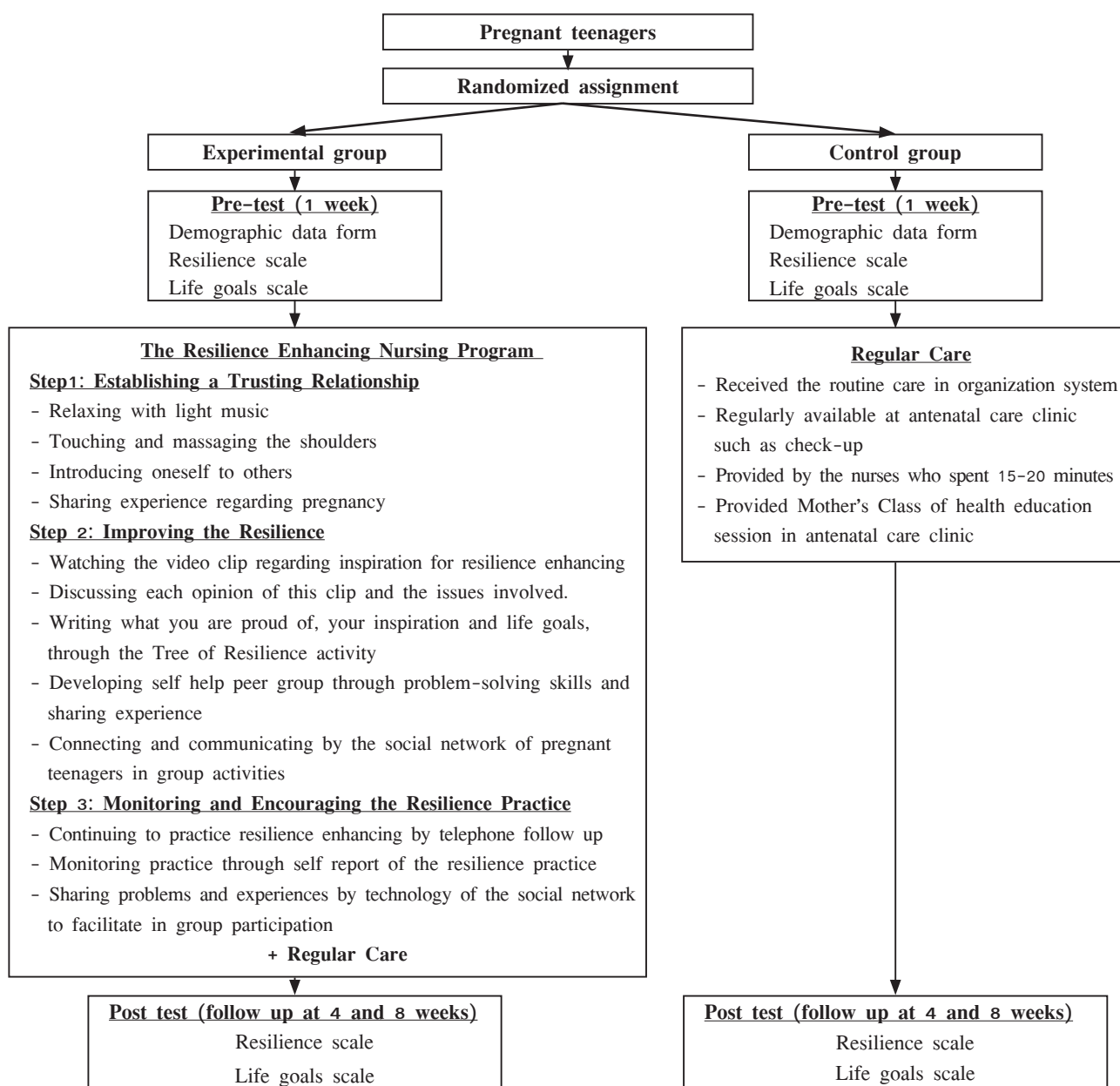


Figure 2 The Experimental Group and Control Group Design Used in this Study

Data Analysis: descriptive statistics, means, frequencies, standard deviations and percentages were used to describe the demographic data of the participants. Repeated measures ANOVA was used to test the difference of life goals between groups at different time points. The assumptions of normality and homogeneity of variance of the variable were tested and checked before the appropriate statistical analysis was performed. All testing in this study was set at a significant level of $p < .05$.

Results

The majority of participants in both groups still lived with their husbands or their parents

accepted the unmarried status and they had partners who accepted the pregnancy and acknowledged the baby was theirs. In the experimental group, the mean age was 17.39 years (SD=1.83), and the gestational age at baseline was 19.08 weeks (SD=5.52). The majority of the pregnant teenagers had a highest education level of high school (87.5%) and worked in a family business or on a farm (57.6%). For the control group, the average age was 17.35 years (SD=1.70), and the gestational age at baseline was 18.64 weeks (SD=6.27). The majority had a highest education level of high school / high school graduate (81.8%) and had worked in a family business or on a farm (43.8%).

Table 1 Comparison of Mean Life Goals Scores in the Experimental and Control Groups by Time.

Time point	Control group (n=66)	Experimental group (n=64)	t	p-value
	M(SD)	M(SD)		
Baseline	45.80(6.75)	47.03(6.28)	-1.074	.285
4 th week	46.71(2.68)	49.13(5.07)	-3.426	.001
8 th week	48.03(3.19)	52.37(2.92)	-8.103	<.001

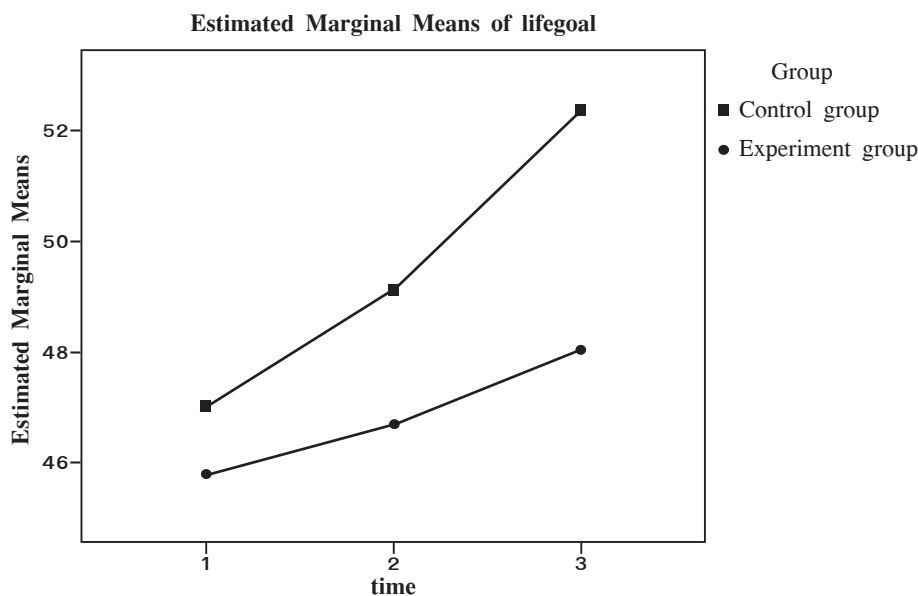


Figure 3 Mean Changed of Life Goals from Baseline to Post-Intervention and Follow-Up in the Intervention (n=64) and Control Groups (n=66)

There were no differences between the two groups in terms of age, gestational age, and gestational age at initiation of antenatal care services, and the period of contraception before the current pregnancy. In addition, there were no significant differences in education, employment, education, income, health care scheme, marital status, partner's attitude towards the pregnancy, relationship with partner or husband, a responsibility of partner or husband toward the pregnancy. A comparison of mean scores of life goals at each time point is shown

in Table 1 and Figure 3. A significantly greater improvement at week 4 ($p = .001$) as well as at week 8th ($p < .001$) was found for women in the experimental group when compared to those in the control group. Differences in life goal were significant by group alone ($p < .001$). Life goal scores increased over time in both groups ($p < .001$); however, scores increased by significantly higher amount for women in the experimental group ($p = .01$), as shown in Table 2.

Table 2 Results of Analysis of Variance for Life Goals in Pregnant Teenagers at Baseline, 4th and 8th Weeks

Source of Variation	SS	df	MS	F	p-value
Between group					
Group	690.7	1	690.7	22.3	<.001
Error	3971.4	128	31.0		
Within group					
Time	944.5	2	472.3	27.3	<.001
Group*time	160.8	2	80.4	4.7	.01
Error	4736.4	256	18.5		

Discussion

The results revealed that the mean scores of life goals of the participants in both groups at the 4th and 8th weeks were significantly greater than at baseline. The findings demonstrated that the intervention program can better increase life goals among pregnant teenagers. According to Collins,¹⁰ resilience can help teenage mothers set life goals and increase aspirations for a positive future including having higher expectations for achievement. In particular, a major life situation among pregnant teenagers significantly influences their life goals during pregnancy.²³ According to Dyer and McGuinness²⁴ life goals among pregnant teenagers are not only associated with an increase in inspiration and motivation, general well-being, and quality of life, but also influenced by previous advantages and disadvantages experienced in that person's life. Therefore, pregnant teenagers need

external stimulation during the antepartum period to help them set goals in their lives.

This study showed a significantly positive effect towards improving life goals for pregnant teenagers. These are identifying and setting valuable personal and setting life goals that can direct to important activities such as setting life goal activities, and helping to achieve the goals in the future. In addition, the important features of the program include a handbook containing practising techniques for managing positive ways to solve problems and experiences necessary for achieving life goals. Participants in the experimental group were encouraged to set their life goals by writing the name of the intervention as "Tree of My Mind" to set their life goals in the future. They were also encouraged to make decisions when planning future life goals such as whether to continue their education and preparing for childbirth. The findings of this

study showed that the pregnant teenagers in the experimental group had life-goal scores higher than pregnant teenagers in the control group.

Based on previous studies, life goals in teenage mothers can increase the expectations for the parenthood role and educational aspirations for higher achievement.⁸ Resilience enhancing can promote aspirations for life goals and also can help a person to set life goals for future life.²³ Having life goals leads to pregnant teenagers having higher expectations for parenting and overall achievement. Thus, pregnant teenagers require life goals in order to improve outcomes for the prenatal period and provide appropriate support for them. Moreover, the predictive variable is having a life goal, which is an important psychological trait in a resilient person in an at-risk circumstance.²³ Therefore, a pregnant teenager needs to have a goal in life that includes higher expectations for parenting and overall achievement, and increased educational aspirations during pregnancy.

McGaha-Garnett and colleagues⁷ reported similar findings in adolescent mothers who indicated that their future goals included higher academic inspirations. There was a significant difference in the life-goal scores among the pregnant teenagers who received the program and those who received the regular care at the 4th and 8th week of the follow-up period. In addition, this study was congruent with a meta-analysis of other resilience programs which revealed that the Penn Resilience Program increased life goals in adolescents.²⁵ In this study, the pregnant teenagers who were enrolled in the program increased their life goals after receiving this program. The program presented goal setting as the process required to establish action plans and to write a reflection at the end of the session. The setting of life goals is an important psychological trait for a resilient person in an at-risk circumstance.²⁶ In addition, studies from a meta-analysis of the

Penn Resilience Program revealed the significance of 6-12 months follow-up interventions which can increase the level of life goals in teenagers.²⁵ Therefore, the results of this study provide nurses and midwives who work with pregnant teenagers with an effective intervention to help this high-risk group to set important life goals during their pregnancy.

Limitations

There were some limitations in this study. Firstly, it was conducted in only two hospitals in Northeastern Thailand, which may not represent other regions in Thailand, which have different cultural aspects. Secondly, the study employed the program to pregnant teenagers that cannot be generalized to other groups. The design of this study should provide goal internal validity and minimize the potential effect of confounding factors.

Conclusion

Our RENP was effective in increasing the life goals at four and eight weeks after completing the program. The participants in the experimental group also had a significantly greater improvement in resilience at the 4th and 8th week compared to the control group. Therefore, this program can guide nurses to assist pregnant teenagers in the antenatal care unit.

Recommendations and Implementations

Further studies should be conducted using this program in pregnant women and in other settings to confirm its effectiveness. In addition, this program was expected to provide significant information to improve life goals for counseling nurses and other health care providers providing care to pregnant women who have high risks or complications during pregnancy to improve their resilience to overcome adversities. In particular,

studies should focus on pregnancy in other high risk groups or those with psychosocial problems. A longitudinal study should be conducted among pregnant teenagers who have received the program over a longer period of follow-up, and the long-term effects of the group program need to be explored among both pregnant teenagers and their families. Further studies need to explore what areas are being improved, for example; relationships, or overall health or understanding. In addition, further studies should focus on the other outcome measurements such as self-esteem, anxiety, social support and maternal attainment in pregnant teenagers.

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