# Effect of Supportive Information on Anxiety Levels in Pregnant Women Awaiting Amniocentesis Results: A Randomized Controlled Trial

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***Objective:*** *To evaluate the effect of supportive information on anxiety levels in women awaiting amniocentesis results.*
***Material and Method:*** *Women underwent amniocentesis were randomized into two groups according to whether they did (group A) or did not (group B) receive supportive information. Anxiety levels were measured using the Spielberger State-Trait Anxiety Inventory at four time points, (1) after amniocentesis, (2) before phoning for test result appointment confirmation, (3) after phoning, during which supportive information was given to group A, and (4) before receiving the test results. Semi-structured interviews were conducted after the last anxiety measurement.*
***Results:*** *There were no significant differences in the state anxiety scores between the two groups after amniocentesis and before phoning to confirm that the amniocentesis results were available. The state anxiety scores after telephoning and before receiving the test results in group A were significantly lower than those in group B (36.69 vs. 42.50, $p<0.001$, and 39.16 vs. 42.82, $p<0.05$, respectively). We identified three stages of psychological distress, uncertainty of fetal safety, uncertainty of the test results, and hopefulness concerning the test results. Women in group B experienced only the two early stages of distress, whereas after receiving supportive information, the psychological state of women in group A further progressed to the hopefulness concerning the test results.*
***Conclusion:*** *Supportive information could alleviate the anxiety level of women awaiting amniocentesis results. Providing appropriate supportive information for each psychological stage should be considered for women underwent amniocentesis.*

***Keywords:*** *Supportive information, Anxiety, Awaiting amniocentesis results*

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Amniocentesis is the most commonly performed invasive prenatal diagnostic procedure and is generally offered to women who have a high-risk of chromosomal abnormalities, the most common of which is Down syndrome. This high-risk group includes women of advanced maternal age (35 years or older), women with abnormal screening test results, women who have a previous child with a chromosomal abnormality, or women with an abnormal ultrasound scan finding. Anxiety regarding amniocentesis has been well studied. Women experience a high anxiety level regarding the invasive procedure, both before the procedure[1-5] and while waiting for the test results[6,7]. Although adequate pre-amniocentesis counseling could alleviate women's anxiety, the effect was not as great as when the diagnostic test result was normal[8,9]. For most women who underwent amniocentesis, anxiety during the waiting period for the test results is unnecessary, as the majority of results are normal.

To shorten the anxiety period of women waiting for amniocentesis results, previous studies investigated the effect of the method of disclosing amniocentesis results on women's anxiety levels while waiting for the results, including issuing early results from a rapid molecular test[10-12] and providing the results when available[10]. However, the effect on anxiety of issuing test results in these manners is inconclusive[13]. While Sun et al[14] explored the experience of Taiwanese women undergoing amniocentesis and found that most medical staff members always console anxious women while they are waiting for the test results, there are no data regarding whether supportive information can reduce anxiety levels.

Due to a lack of previous studies to

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investigate whether supportive information could reduce the anxiety in women waiting for amniocentesis results, the authors investigated whether supportive information can alleviate women's anxiety while awaiting results and explored the women's experience during the waiting period.

## Material and Method

### *Participants*

The present study was approved by the Institutional Review Board of Siriraj Hospital, and conducted between February and July 2015 at the Division of Maternal Fetal Medicine, Department of Obstetrics and Gynecology of Mahidol University. Written informed consent was provided by all study participants.

The study participants were pregnant women with a singleton pregnancy underwent second trimester genetic amniocentesis due to advanced maternal age (35 years or older at the time of delivery). Participants were excluded if they had abnormal test results, had miscarriage, failed the karyotype test, or had incomplete anxiety questionnaires.

### *Study design*

A randomized controlled trial was used. The study was conducted after the amniocentesis procedure, while participants were waiting for an appointment to receive the results of the amniocentesis test. Using a computer-generated sequence, the participants were equally and randomly allocated into two groups (1: 1 ratio): women in group A were given supportive information when they were phoned to confirm their amniocentesis test results appointment, which occurred 1 day before the appointed test results date; women in group B were not given supportive information. The allocation was concealed from the participants.

The Spielberger State-Trait Anxiety Inventory (STAI) was used to measure the anxiety levels of the studied participants. The STAI is comprised of two self-report scales for measuring anxiety: state anxiety (STAI-S) measures how a person feels at that moment; and trait anxiety (STAI-T) measures how a person usually feels. Both scales are comprised of 20 items those are rated on a four-point scale (1 to 4), with a possible score ranging from 20 to 80. The anxiety levels were assessed at the following 4 time points: (1) after amniocentesis, while waiting for the amniocentesis test results appointment; (2) at home, before phoning to confirm the amniocentesis test results appointment, which occurred 1 day before the appointed test results date; (3) at home, after phoning, during which time supportive information was given to group A; and (4) in the waiting room, before receiving the amniocentesis results on the appointed date. All participants were asked to complete both the STAI-S and the STAI-T just after the amniocentesis. They were requested to complete the STAI-S before phoning, after phoning, and before receiving the amniocentesis results. Pregnant women who scored above the cut-off score of 40 were considered to be highly anxious[15].

A semi-structured interview was conducted in a convenience sub-sample of 60 women after the completion of the fourth anxiety assessment, 30 women in each group. The semi-structured interview consisted of six open-ended questions that focused on the participants' psychological experiences during the waiting period (the period from amniocentesis completion to the time just before phoning to confirm the test results appointment), the characteristics of the experiences, and the women's concerns. Each interview lasted approximately 10 to 15 minutes. All interview data were recorded using compact discs and were transcribed verbatim.

Demographic data, including age, gestational age, parity, history of previous abortion, pregnancy mode, history of previous amniocentesis, and history of previous fetal anomalies, were also recorded.

### *Intervention*

One day before the appointment to receive amniocentesis results, the research nurse gave information to each participant while she phoning to confirm that the amniocentesis result was available. The information was comprised of two parts: confirmative and supportive information. The confirmative information was the state as "Amniocentesis result was available, you can receive the test result on the appointment", and the supportive information was "please do not worry about the test result". Information of group A consisted of the confirmative and supportive information. Only the confirmative information was given to women in group B.

### *Statistical analysis*

The sample size was calculated based on the study of Hewison et al[10] and found that the mean and standard deviation of anxiety score of pregnant women during waiting amniocentesis result were 53 and 12, respectively. The calculated minimum sample size was

92 in each group by nQuery Advisor software calculation, significant level of 0.05 and power of the test of 80%. An additional 15% of pregnant women were included in each group to allow for possible the participant dropout or met the excluded criteria. Therefore, a sample size of 106 pregnant women per group was required.

The demographic data of the two groups were compared using Student's t-test and the Chi-square test where appropriated. The trait and state anxiety scores were compared between the groups by multivariate testing, as they were normally distributed. All statistical analyses were performed using PASW 18.0 software (SPSS Inc., Chicago IL, USA). A *p*-value <0.05 was considered statistically significant.

***Qualitative data analysis***

We used a modification of the thematic content analysis process to analyze the interview data[16], and the first investigator read all of the verbatim transcripts and identified common themes that were expressed in the interviews. Several categories of responses were identified for each theme. The other two investigators then independently re-reviewed each transcript in detail and extracted significant statements, which were placed into categories. Any differences in categorization schemes were resolved by re-analysis and consensus. Following this process, a study consultant with expertise in qualitative analysis who was not involved in the study was asked to validate the results.

**Results**

Two hundred twelve pregnant women were enrolled, 106 women were randomized into group A, and 106 women were randomized into group B. Of these women, nine were excluded due to abnormal amniocentesis results, and six were excluded due to incomplete anxiety questionnaires. Consequently, the final number of study participants was 197, with 97 women in group A and 100 women in group B.

The demographic characteristics of the two groups were shown in Table 1. There were no significant differences between the two groups with respect to age, gestational age, parity, history of abortion, pregnancy mode, or amniocentesis experience.

Details regarding the trait and state anxiety scores of women in group A and group B were presented in Table 2. No significant difference was found between the two groups with respect to trait anxiety scores. The state anxiety scores after amniocentesis and before phoning to confirm the amniocentesis results appointment were also not significantly different between the groups. The state anxiety scores of women in group A were significantly lower than those in group B both after the supportive

**Table 1.** Demographic characteristics of group A (with supportive information) and group B (without supportive information)

| | Group A (n = 97) | Group B (n = 100) | *p*-value |
|---|---|---|---|
| Age (years) | 37.48±2.49 | 37.77±2.76 | 0.447 |
| Gestational age (weeks) | 18.28±0.80 | 18.20±0.74 | 0.476 |
| Parity (%) | | | 0.760 |
| Nulliparous | 29 (29.1) | 32 (32) | |
| Multiparous | 68 (70.1) | 68 (68) | |
| Previous abortion (%) | | | 0.732 |
| Yes | 20 (20.6) | 23 (23) | |
| No | 77 (79.4) | 77 (77) | |
| Pregnancy mode (%) | | | 0.212 |
| Spontaneous pregnancy | 96 (99) | 95 (95) | |
| Assisted reproductive pregnancy | 1 (1) | 5 (5) | |
| History of amniocentesis (%) | | | 0.564 |
| Yes | 90 (92.8) | 95 (95) | |
| No | 7 (7.2) | 5 (5) | |
| Previous fetal anomaly (%) | | | 1.000 |
| Yes | 94 (96.9) | 97 (97) | |
| No | 3 (3.1) | 3 (3) | |

Data are presented as the means±standard deviations or n (%)

**Table 2.** Comparison of trait and state anxiety scores between women in group A (with supportive information) and group B (without supportive information)

| Anxiety scores | Group A (n = 97) | Group B (n = 100) | *p*-value |
|---|---|---|---|
| Trait anxiety scores | 38.20±6.19 | 38.78±6.46 | 0.518 |
| State anxiety scores | | | |
| 1) After amniocentesis | 40.90±9.04 | 40.92±8.81 | 0.986 |
| 2) Before phoning | 44.18±10.70 | 43.10±10.87 | 0.485 |
| 3) After phoning | 36.69±10.61 | 42.50±10.53 | 0.000 |
| 4) Before receiving the amniocentesis results | 39.16±10.15 | 42.82±10.89 | 0.016 |

Data presented as the means ± standard deviations

information was given to group A when they phoned to confirm the amniocentesis results appointment and before they received the amniocentesis results (36.69 vs. 42.50, $p<0.001$ and 39.16 vs. 42.82, $p<0.05$, respectively).

After analyzing and synthesizing the qualitative data from the semi-structured interviews to formulate constructs, the psychological state observed by the pregnant women in the present study were organized into the following three stages: uncertainty of fetal safety stage, uncertainty of the test results stage, and hopefulness concerning the test results stage.

Both the quantitative and qualitative results detailed above provide evidence of the psychological changes exhibited by these women. The following sections explain in detail the psychological stages determined from the qualitative data.

***Uncertainty of fetal safety stage***

When women were asked to describe their psychological distress during the early period after the amniocentesis procedure, nearly all of them described an intensely negative emotion. The mean state anxiety scores of the participants in group A and group B were 40.90±9.04 and 40.92±8.81, respectively. However, they were distressed about the possibility of both miscarriage and abnormal test results, and most women were more worried about fetal safety than the test results. One woman indicated, "I was anxious in many ways…whether I would miscarry…what the results would be…but in the first place, I was more worried about the miscarriage risk". Several other women voiced similar responses, stating, "The doctor said that there was some risk of miscarriage, so I was afraid. I had to be very cautious…".

Most women, in both groups reported that their anxiety regarding fetal safety gradually declined over time. They were assured of the fetus' health when they observed no abnormal features in their pregnancy. As one woman explained: "It took me a few days after the amniocentesis to be more assured…the needle site did not hurt anymore, and my baby was kicking well". Another woman reported: "I followed the nurse's advice, everything seemed okay, a few days later, I felt more confident that the pregnancy would not miscarry", or "Right after the procedure, I was worried about the miscarriage risk…then everything was fine, I was feeling better… just only waiting for the test results".

However, for women who had experienced threatened abortion, the intense negative emotion was alleviated when the abnormal signs diminished. As one woman stated: "When I got back, I had vaginal spotting that made me even more horrified. I feared I would miscarry…so I went to see my doctor and was given bed rest. When there was no more bleeding and no other funny things happening, I was eventually relieved".

***Uncertainty of the test results stage***

One day before the appointed amniocentesis results date and before phoning to confirm the appointment, the mean state anxiety score of the women was 44.18±10.70 in group A and 43.10±10.87 in group B. When asked to describe their emotions at this time, most women in the two groups vividly expressed that their psychological distress regarding the possibility of an abnormal amniocentesis result was markedly increased. For example, one participant stated: "When the appointed results date drew nearer, I was starting to get worried again…what the result would be…whether my baby will have Downs…because of my age". Similarly, another woman reported: "A few days before the due date, I started to worry… and was

also fearful. I don't know how the result will turn out to be...".

Most of the women in group B, who did not receive supportive information, continued to experience a high level of psychological distress until the date of the amniocentesis results appointment. The mean state anxiety scores of these participants were 42.50±10.53 and 42.82±10.89 after phoning to confirm the test results appointment and before receiving the test results, respectively. When asked to describe their feelings during the time period from after phoning to confirm the appointment to the interview (before receiving the amniocentesis results), the women explained the various manifestations of their high level of concern regarding the uncertainty of the amniocentesis results, including abnormal physical symptoms, sleep pattern disturbances, and intense emotions. One woman stated, "I'm trying to think that everything is fine. But, I am still worried …very worried …I felt heavy in the chest". Another woman said: "… last night I sleep fitfully, I can't stop thinking …whether the test results will be okay …thinking over and over again". A third woman explained her psychological state at the moment of the interview as: "I can't help being nervous…my hands are sweating … my heart fluttered … I fear that the amniocentesis results would turn out abnormal".

***Hopefulness concerning the test results stage***

After phoning to confirm the test results appointment, during which the women in group A were given supportive information, the mean state anxiety score of the women in group A was 36.69±10.61. In addition to a marked decrease in psychological distress compared with the level before phoning, the feeling of uncertainty regarding the amniocentesis results turned into hopefulness concerning the test results. One woman stated, "...the fear of abnormal results disappeared …I felt relieved…felt confident that the test results were normal". A second woman reported, "I felt much better, much more relieved… from worries. It's a load off my chest". A third similarly remarked, "I felt a lot better… more assured that the results would be good".

One day later, on the appointment date to receive the amniocentesis results, the mean state anxiety score of the women in group A before receiving the amniocentesis results was 39.16±10.15. The women were asked to describe their feelings at this stage, and many expressed a residual anxiety about the test results. Most of the women in group A obviously communicated their eagerness to receive confirmation of the test results. As one woman stated, "I am excited, eager to know the results… today… after all, I will know exactly what the result is, so that I will be truly happy, finally". Many other women reported similar feelings, stating: "I can't help being excited …I want to know the definite results …I want to make sure" and "… rather worry…I am curious to know the certain test results that it is really normal the result".

**Discussion**

The goal of the present study was to determine whether supportive information would alleviate the anxiety level of pregnant women awaiting amniocentesis results, as well as to explore their psychological experiences during the waiting period. Our results showed that participants experienced high anxiety levels during the waiting period, and comparing women who did and did not receive supportive information, supportive information could mitigate the anxiety of women waiting for amniocentesis results. Additionally, our qualitative data further revealed the existence of three stages of psychological distress while they were awaiting the test results: uncertainty of fetal safety stage, uncertainty of the test results stage, and hopefulness concerning the test results stage. Women who did not receive supportive information experienced only the two early stages of distress during the waiting period, namely: uncertainty of fetal safety stage and uncertainty of the test results stage. In contrast, for women who received supportive information, the psychological stage of the uncertainty of the test results progressed to the hopefulness concerning the test results stage immediately after receiving supportive information.

Our study examined pregnant women who were awaiting amniocentesis results and is similar to many studies reported that women awaiting amniocentesis results experience anxiety regarding fetal safety and the results[6,14]; however, neither previous study reported the patterns of psychological distress and changed in the patterns. Our results revealed the existence of two psychological patterns and three psychological stages in women who are awaiting the results. The first psychological pattern was found in women awaiting amniocentesis results naturally, with no intervention. The psychological experiences of these women involved the uncertainty of fetal safety stage and the uncertainty of the test results stage. The second psychological pattern was found in women who received supportive information during the uncertainty of the test results stage. For these women, three

psychological stages existed: uncertainty of fetal safety stage, uncertainty of the test results stage, and hopefulness concerning the test results stage.

Our results vividly showed that anxiety scores were markedly decreased immediately after receiving supportive information among women received the information compared with those who did not, also the emergence of hope for a normal result. There were two possible explanations of the findings. First, content of the information could encourage the confidence of normal amniocentesis result. The other was a characteristic of the information giver, a credible person; in the present study was a specialist nurse in the field of prenatal diagnosis.

The hopefulness concerning the test results stage has not been previously described. Although Hewison et al[10] reported that a partial amniocentesis result from rapid testing reduced the anxiety of women while waiting for the full karyotype results, they did not mention the other psychological experiences. One possible reason that this stage has not been previously described is that the methodology of the previous study was quantitative, and it was limited in its ability to describe extraneous variables. Combining a quantitative and qualitative approach, our study further revealed that supportive information reduced the distress experienced (e.g.: worry, fear) and induced a positive experience regarding the expected amniocentesis results (e.g.: relief, confidence, and assurance).

Interestingly, there was an increased level of anxiety at the time point before receiving amniocentesis results (the last period of the hopefulness concerning the test results stage) compared with the level after the phoning time point (early period of the hopefulness concerning the test results stage). A possible explanation for this increased anxiety level was that the residual anxiety regarding the amniocentesis results may have been provoked by the short period of time to know the results.

Furthermore, our qualitative data suggested that the predominant methods used by these women to cope with their feelings while waiting for the test results differed between the early period after the amniocentesis procedure and the period near disclosure of the results, and this result had not been previously reported. In the early period of awaiting the results, most women used references to normal signs of pregnancy to cope with their uncertain feelings regarding fetal safety; however, during the last period before receiving the results, those who received supportive information used this information to cope with their uncertain feelings concerning the amniocentesis results. In contrast, we could not identify a definite coping method in the group of women who did not receive supportive information. One possible explanation for these findings, which have not been previously reported, may be that previous studies focused on the coping methods women used while waiting for their test results by using either a specific question related to the coping mechanism[6] or a questionnaire (Optimism-Pessimism Scale)[2], which allowed those studies to detect a main source of support provided to women (e.g.: their spouse, positive thinking, and occupational activities). In contrast, we investigated the general psychological experience of the women, without a specific intent to investigate the method of coping with distress. However, with regard to the experience of psychological distress, when women were asked to describe their distress during the early period after the amniocentesis procedure, the women may have expressed only the most effective method that they used to reduce their feelings of uncertainty concerning fetal safety, with references to the normal signs of pregnancy (e.g.: the baby was kicking well, everything seemed okay, and no other unusual events occurred); nevertheless, they may have used many methods to cope with their feelings, such as those presented in previous studies. Similar to referencing normal signs of pregnancy, when women were asked to describe their emotions after calling to confirm their results appointment, our data may reveal only the most effective method that women used to cope with their feeling of anxiety concerning the amniocentesis results. Those women who did not receive supportive information may have had no predominant coping method.

Our study provides insight into the changing psychological stage of pregnant women who underwent amniocentesis while waiting for the results, on both who did and did not receive supportive information. Our results revealed the benefit of supportive information in reducing women's anxiety. Practitioners caring for women who are awaiting amniocentesis results should recognize these changes and consider supporting these women appropriately according to their psychological stage.

Several limitations of the present study should be considered. First, even though this study used a prospective longitudinal design to investigate anxiety during the waiting period (4 weeks), we examined the anxiety level at four time points, and our results showed

anxiety levels at only some points during the waiting time; therefore, this conclusion must be interpreted with caution. Additionally, further study should be conducted to examine the anxiety level more frequent, especially during the early period after the amniocentesis procedure, during which we measured the state anxiety level at only one time point. Second, using recall interview data from open-ended interviews before disclosing the results of amniocentesis, we may have over-claimed the effectiveness of this method to support the women. Finally, because all the women in our study had normal amniocentesis results, our findings may not be generalizable to other women who have abnormal results.

The strength of our study is the use of both quantitative (a randomized controlled trial) and qualitative methods to investigate anxiety while women await their amniocentesis results. This design allowed us to discover the existence of three psychological stages, namely: uncertainty of fetal safety, uncertainty of the test results stage, and hopefulness concerning the test results stage, and two psychological patterns, the psychological patterns of women who did and did not receive supportive information, which have not been previously reported.

**What is already known on this topic?**

Amniocentesis is accompanied with high levels of anxiety in pregnancy women while waiting for the results. Psychological distress during the waiting period can be characterized as an uncertainty of fetal safety and an uncertainty of the test results.

**What this study adds?**

There were two psychological patterns and three psychological stages in women awaiting the amniocentesis results. The first psychological pattern was found in women awaiting amniocentesis results naturally, with no intervention. The psychological experiences of these women involved the uncertainty of fetal safety stage and the uncertainty of the test results stage. The second psychological pattern was found in women who received supportive information during the uncertainty of the test results stage. For these women, three psychological stages existed: uncertainty of fetal safety stage, uncertainty of the test results stage, and hopefulness concerning the test results stage.

Supportive information could alleviate the psychological distress of women awaiting amniocentesis results, change feeling of uncertainty of the test results stage to hopefulness stage.

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**Potential conflicts of interest**

None.

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## *ผลของการให้ข้อมูลสนับสนุนทางด้านจิตใจต่อระดับความวิตกกังวลของสตรีตั้งครรภ์ที่กำลังรอผลการตรวจน้ำคร่ำ*

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***วัตถุประสงค์:*** *เพื่อศึกษาผลของการให้ข้อมูลสนับสนุนทางด้านจิตใจต่อระดับความวิตกกังวล และประสบการณ์ด้านจิตใจของสตรีตั้งครรภ์ที่กำลังรอผลการตรวจน้ำคร่ำ*

***วัสดุและวิธีการ:*** *กลุ่มตัวอย่างเป็นสตรีตั้งครรภ์ที่ได้รับการเจาะน้ำคร่ำเพื่อวินิจฉัยกลุ่มอาการดาวน์ โดยสุ่มแบ่งออกเป็น 2 กลุ่ม คือ กลุ่มควบคุมได้รับข้อมูลเกี่ยวกับผลการตรวจน้ำคร่ำตามมาตรฐานและกลุ่มทดลอง ได้รับข้อมูลเกี่ยวกับผลการตรวจน้ำคร่ำตามมาตรฐานร่วมกับการได้รับข้อมูลสนับสนุนทางด้านจิตใจ เก็บข้อมูลโดยการประเมินความวิตกกังวลขณะเผชิญ 4 ครั้ง คือ ภายหลังการเจาะน้ำคร่ำ (วันที่ได้รับการเจาะน้ำคร่ำ) ก่อนโทรศัพท์ (1 วัน ก่อนวันนัดมารับผลการตรวจน้ำคร่ำ เพื่อขอรับการยืนยันการมารับผลการตรวจน้ำคร่ำ) ภายหลังโทรศัพท์ (ภายหลังจากกลุ่มทดลองได้รับข้อมูลสนับสนุนทางด้านจิตใจแล้ว) และก่อนได้รับผลการตรวจน้ำคร่ำ (วันนัดฟังผลการตรวจน้ำคร่ำ) และการสัมภาษณ์แบบกึ่งมีโครงสร้างถึงประสบการณ์ด้านจิตใจในช่วงระหว่างการรอฟังการตรวจน้ำคร่ำ (ภายหลังทำแบบประเมินความวิตกกังวลครั้งสุดท้าย และก่อนได้รับผลการตรวจน้ำคร่ำ)*

***ผลการศึกษา:*** *ค่าเฉลี่ยความวิตกกังวลขณะเผชิญภายหลังการเจาะน้ำคร่ำและก่อนโทรศัพท์ของกลุ่มควบคุมและกลุ่มทดลองไม่แตกต่างกัน อย่างมีนัยสำคัญทางสถิติ ($p>0.05$) ในขณะที่ค่าเฉลี่ยความวิตกกังวลขณะเผชิญภายหลังโทรศัพท์และก่อนได้รับผลการตรวจน้ำคร่ำของกลุ่มทดลอง น้อยกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ (36.69 vs. 42.50, $p<0.001$ และ 39.16 vs. 42.82, $p<0.05$ ตามลำดับ) โดยพบว่าภาวะทางจิตใจของกลุ่มตัวอย่างมีการเปลี่ยนแปลง 3 ระยะ คือ ระยะความไม่มั่นใจในความปลอดภัยของทารกในครรภ์ ระยะความไม่มั่นใจในผลการตรวจน้ำคร่ำ และระยะการมีความหวังในผลการตรวจน้ำคร่ำ โดยภาวะทางจิตใจของกลุ่มควบคุมส่วนใหญ่มักหยุดอยู่ที่ระยะความไม่มั่นใจในผลการตรวจน้ำคร่ำ ในขณะที่ภาวะทางจิตใจของกลุ่มทดลองมีการเปลี่ยนแปลงต่อไปจนถึงระยะการมีความหวังในผลการตรวจน้ำคร่ำ ภายหลังจากที่กลุ่มทดลองได้รับข้อมูลสนับสนุนทางด้านจิตใจแล้ว*

***สรุป:*** *การให้ข้อมูลสนับสนุนทางด้านจิตใจสามารถช่วยลดความวิตกกังวลของสตรีตั้งครรภ์ที่กำลังรอผลการตรวจน้ำคร่ำได้ ดังนั้นจึงควรมีการให้ข้อมูลสนับสนุนทางด้านจิตใจแก่สตรีตั้งครรภ์ที่กำลังรอผลการตรวจน้ำคร่ำทุกราย โดยข้อมูลที่ให้แก่สตรีตั้งครรภ์จะต้องมีความถูกต้องและเป็นความจริง*