Effect of Self-affirmation versus Back Massage on Psychological Distress and Fear of Birth among Primigravida Women

Hanan Abdelrahman Kandeel[(1)], Nehal Shalaby Awad Mahmoud[(2)], Mahmoud Abdelwahab Khedr[(3*)], Asmaa Anwar Abd elglil[(4)]

(1) Assistant professor, Obstetrics & Gynecologic Nursing Dep., Faculty of Nursing, Alexandria University, Alexandria, Egypt.
(2) Lecturer, Obstetrics & Gynecologic Nursing Dep., Faculty of Nursing, Alexandria University, Alexandria, Egypt.
(3) Lecturer of Psychiatric and Mental Health Nursing, Faculty of Nursing, Alexandria University, Egypt.
(4) Lecturer, Woman's Health and Midwifery Nursing Dep., Faculty of nursing, Kafr El-Sheikh University, Kafr El-Sheikh, Egypt.

Abstract

Background: A multitude of interventions encompassing complementary and alternative therapies have emerged as viable means to regulate psychological distress and fear of birth. These interventions encompass practices such as self-affirmation, breathing exercises, and massage, all of which contribute to the mother's and fetus's well-being. **Aim:** was to examine the effect of self-affirmation versus back massage on psychological distress and fear of birth among primigravida women. **Design:** Quasi-experimental research design (pre and post-test non-equivalent control group design) was adopted. **Setting**: This study was conducted out patient of obstetric and gynecological clinics at Kafr El-Sheikh General Hospital. **Subjects:** A purposive sample consisting of 80 primigravida women was recruited according to inclusion criteria. **Tools:** Three tools were employed, a structured demographic and obstetric data interview schedule:, kessler Psychological Distress Scale, and the Wijma Delivery Expectancy/Experience Questionnaire. **Results: Pre-intervention**, there was no significant difference between both groups in terms of psychological distress and fear of birth. However, starting from the **4 ,6, 8 Weeks** Post-intervention , significant differences emerged, with the self-affirmation group showing a greater reduction in distress and an increase in psychological well-being , also, significant differences on reducing fear of birth starting from the **4, 6, 8 Weeks** Post-intervention ($P < 0.001$) compared to the back massage group. **Conclusion:** self-affirmation group generally exhibited better psychological well-being, lower distress levels than the back massage group. Also, had a pronounced effect on fear of birth reduction. **Recommendations**: Incorporate self-affirmation into the policy of antenatal care to improve psychological distress and fear of birth among pregnant women.

Keywords: Self-Affirmation, Back Massage, Psychological Distress, Fear of Birth, Primigravida Women.

Introduction

Childbirth is an exceptional occurrence in women's lives that is often perceived as a vulnerable transition period**.** The timing of the delivery is critical for the survival of both the mother and the child due to the substantial escalation of the risk of morbidity and mortality associated with complications. The recent Global Strategy for the Health of Women, Children, and Adolescents (2016-2030) and the objectives of Sustainable Development Goal 3, which aim to guarantee healthy lives and foster well-being for individuals of all age groups, are the key factors driving this shift in global priorities. The objective is to ensure that women and their unborn children not only successfully overcome any complications that may arise during childbirth but also thrive and achieve their maximum potential in terms of physical and psychological health aspects **(Lockwood, & Magriples,. (2022).**

Due to fluctuations in estrogen and progesterone levels, pregnant women undergo not only physiological but also psychological changes. This has led to pregnancy being viewed as a psychological "stress test" **(Răchită et al., 2022).** A mother's concerns about her well-being may also encompass anxieties related to potential miscarriage, improper fetal development, labor, and delivery, as well as accounts of adverse childbirth experiences from others. It is estimated that approximately ten to thirty percent of women have encountered negative childbirth experiences **(Chabbert et al., 2021).**

Psychological distress is primarily defined as an emotional state featuring signs of despondency, such as (low mood, lack of motivation, and a sense of despair), stress, and

anxiety (e.g., sensations of tension and unease). These indications may be linked to somatic symptoms (such as fatigue, headaches, and insomnia). Despite the fact that pregnancy should be a period of elation and anticipation, a cross-sectional study by **Barat et al., (2023)** in Iran found that 19% of women experience psychological distress during pregnancy, and 15% continue to face it postpartum.

The psychological burden imposed by pregnancy-related distress is substantial and has the potential to significantly influence obstetric, fetal, and neonatal outcomes. Studies conducted by **Corbijn van Willenswaard et al., (2017) and Ellman et al., (2019),** indicate that maternal psychological distress during pregnancy can potentially have an adverse effect on the development of the fetus. It has the potential to exacerbate their inflammatory conditions and influence the hormones associated with the hypothalamic-pituitary-adrenal (HPA) axis. These alterations subsequently impact the prenatal brain development and play a significant role in the pathophysiology of neurodevelopmental disorders in offspring. The various aspects of maternal distress, particularly during the mid-pregnancy phase, can potentially impact fetal growth **(Van den et al., 2020).**

Although pregnancy and delivery are physiological processes, certain women perceive them to be significantly distressing, resulting in the development of a childbirth-related fear (FOC) **(Araji et al., 2020).** It is a complex variable that incorporates numerous indicators, encompassing unfavorable attitudes towards childbirth as well as fears regarding pain, medical interventions, compromised autonomy, instances of misconduct by healthcare professionals, mortality rates for both mother and child, physical harm, alterations in body image, and socioeconomic disadvantages such as unemployment and poverty **(Sanjari et al., 2022).**

Fear of childbirth (FOC) is a common psychological condition with significant impacts on women's health, well-being, and daily functioning. Severe FOC can lead to insomnia, nightmares, fatigue, insecurity, and, in some cases, pregnancy termination **(Klabbers et al., 2020).** It is associated with prolonged labor, increased risk of dystocia, postpartum depression, and post-traumatic stress disorder **(Yildiz et al., 2017; Grundström et al., 2022).** Acute FOC may cause doubts about childbirth ability, resulting in unnecessary cesarean deliveries, which elevate risks for mothers, including ectopic pregnancy, uterine rupture, stillbirth, infertility, and hysterectomy. Children born via cesarean are at higher risk for asthma, urinary infections, obesity, and type 1 diabetes **(Eide et al., 2019; Słabuszewska et al., 2020).**

Complementary and alternative therapies, such as self-affirmation, breathing exercises, massage, and hypnobirthing, have emerged as effective methods for managing psychological distress and fear of childbirth, benefiting both mother and fetus **(Hall et al., 2020)**. Massage therapy is an effective non-pharmacological method for reducing fear and preventing adverse birth experiences. By applying pressure to soft tissues, it enhances blood flow to the amygdala and hypothalamus, regions involved in stress and emotional regulation. This activates the hypothalamic control of the autonomic nervous system, cortisol release, and limbic activity **(Aswitami et al., 2022)**.

During pregnancy, massage provides numerous benefits, including reduced pain and anxiety, alleviated lymphedema, elevated beta-endorphin levels, relief from psychological distress, decreased muscle tension and fatigue, lower blood pressure, improved labor satisfaction, and more positive birth perceptions **(Akköz & Karaduman, 2020).**

Self-affirmation is another pharmacological technique that reinforcing or affirming to get rid of negative beliefs that exist in the subconscious mind. Positive affirmations can only be limited to thoughts, written in a note, heard from others, or spoken to others in a way that is repeated to provide strength and confidence from within an individual. Positive affirmations prepared for pregnant women have messages on physical and mental health, which play a role in motivating, inspiring, providing support, changing perspectives, influencing the body, soul, and mind to become habits of daily behavior **Runjati, Nurcahyani (2021).**

The practice of self-affirmation diminishes maternal psychological distress (anxiety, stress, and depression) and fear of childbirth, thereby catalyzing motivation, inspiration, and support, as well as altering perspectives and affects the body, mind, and spirit, helping to cultivate behaviors that integrate into daily routines **(Thitipitchayanant et al., 2018).**

Pregnant women may experience a sense of relaxation and ease, devoid of any tension or anxiety, if they can proficiently attain a state of relaxation through controlled breathing and regularly reinforce positive affirmations to themselves. Upon achieving a state of relaxation, the body will release serotonin and endorphins, thereby promoting a harmonious and balanced functioning of all nerves. Therefore, midwives must acquire proficiency in the technique of allaying the fear of childbirth, psychological distress, and labor pain, prioritizing a positive, gentle, and secure approach to delivery, and understanding the means to achieve it quickly **(Nurcahyani, Runjati& Nugraheni 2020).**

Significance of the study

Pregnancy-related hormonal and psychological changes can lead to anxiety about body image, fears of childbirth complications, and stress influenced by family dynamics, posing risks to both mother and fetus **(Chabbert et al., 2021).** Fear of childbirth (FOC) is notably prevalent among pregnant Egyptian women, highlighting complex interactions between obstetric, psychological, and demographic factors **(Elsharkawy et al., 2024).** The extent of the severity of delivery fear differs among women and can range from minimal to profound concern. The global prevalence of FOC has been estimated to be 14%, while approximately 10% of expectant mothers experience a severe manifestation of FOC **(Mortazav & Mehrabadi, 2021).** Research suggests that combining affirming words with abdominal breathing activates the parasympathetic nervous system, soothes anxiety, and boosts oxytocin levels, improving maternal and fetal health **(Sweeney & Moyer, 2020)**. Despite the known benefits, massage therapy during pregnancy remains underutilized, with limited research on its physiological and emotional impacts **(Mueller & Grunwald, 2021)**. There is a notable lack of studies integrating back massage with self-affirmation techniques for pregnant women.

Aim of the study

Examine the effect of self-affirmation versus back massage on psychological distress and fear of birth among primigravida women.

Hypotheses:

To reach this study's aim, the following hypotheses were formulated

H1: Primigravida women who practice self-affirmation during the third trimester exhibit less psychological distress level than those who receive back massage.

H2: Primigravida women who practice self-affirmation during the third trimester exhibit decreased level of fear of birth than those who receive back massages.

Operational definition

In this research self-affirmation is sentences that are structured to strengthen the confidence of women of childbearing age to overcoming situations, produce something positive and increase self-integrity to cope with pregnancy and child birth. As measured by Tool II: Kessler Psychological Distress Scale and Tool III: The Wijma Delivery Expectancy/ Experience Questionnaire

Materials and method

Materials

Research design:

Quasi-experimental research design (pre and post-test non-equivalent control group design) was adopted, where the effect of the independent variable (Self-affirmation and Back Massage) on the dependent variable (psychological distress and fear of birth) was examined in this study. The study registered with ClinicalTrials.gov on 30/05/2023; registration number "NCT05883501"**.**

Settings:

This study was carried out at the out patient of obstetric and gynecological clinics at Kafr El-Sheikh General Hospital, Kafr El-Sheikh Governorate, Egypt. The Kafr El-Sheikh

General Hospital is a public hospital provides free health services to Kafr El-Sheikh governorate population and its centers. This setting was selected due to its status as the main university hospital in Kafr El-Sheikh Governorate that offers comprehensive obstetrics and gynecology services, and additionally, it experiences a considerable influx of expectant mothers. This circumstance is advantageous for the researcher as it facilitates the inclusion of a sufficient sample size.

Subjects:

A purposive sample consisting of 80 primigravida women was recruited in accordance with the specified inclusion criteria: primigravida ;aged 20-35 years; during second & third trimester (24-39 weeks); complained of mild or moderate level of psychological distress and mild or moderate or high level fear of birth, can read &write, devoid of any medical, obstetric, gynecological and other psychological conditions, with normal course of pregnancy, regularly attend antenatal care visits and finally with intact back skin and free from burn, wound, scars, injuries, inflammation and allergic reactions.

Epi info 7 statistical program was employed to calculate the sample size utilizing the following parameters: size of population = 415/ 3 months, expected frequency=50%, acceptable error= 10%, confidence coefficient= 95% and size of minimal sample = 78.

The final sample size was established at 80, which was deemed sufficient for the anticipated normal responses.

The individuals selected for the study were systematically equitably allocated into two study groups (Self-affirmation and Back massage groups).

Data collection tools:

Three tools were employed for the purpose of data collection.

Tool I: A structured interviewing questionnaire schedule:

This tool was developed and used by the researchers to gather the following data and consisted of two parts: **First part** was demographic data including age, occupation, educational level, current residence. **Second part** entailed history of obstetric such as weeks of gestation, and number of follow-up visits.

Tool II: Kessler Psychological Distress Scale (K10):

This scale was adapted and used by the researchers. It is a straightforward assessment of psychological distress **(Kessler et al., 2003).** This scale consists of 10 inquiries regarding emotional states such as in the past 4 weeks, How often did you feel tired out for no good reason?, How often did you feel nervous?, How often did you feel so nervous that nothing could calm you down?, How often did you feel hopeless? and How often did you feel restless or fidgety?, each offering five possible responses ranging from one, indicating an absence of occurrence, to five, signifying its perpetual presence. By adding up the cumulative scores of all ten elements, a minimum score of 10 and a maximum score of 50 could be derived. This evaluation can be utilized as a concise tool to ascertain distress levels. Should the response to the preceding inquiry be 'none of the time,' inquiries three and six are rendered unnecessary. In such scenarios, inquiries three and six should automatically be assigned a score of one. Scores will vary from 10 to 50.

The two primary subscale scores were also presented as depression, which encompassed fatigue and negative effect, specifically items 1, 4, 7, 8, 9, and 10. Additionally, fatigue was measured by items 1 and 8, while negative affect was assessed through items 4, 7, 9, and 10. Furthermore, anxiety was evaluated as a separate subscale, comprising the components of nervousness and agitation, as indicated by items 2, 3, 5, and 6. Nervousness was measured using items 2 and 3, while agitation was assessed by items 5 and 6.

Scores under 20 are generally indicative of good mental health, whereas scores between 20 and 24 suggest the presence of a mild psychological distress. Scores ranging from 25 to 29 are associated with a moderate psychological distress while scores of 30 or above are typically indicative of a severe psychological distress.

Tool III: The Wijma Delivery Expectancy/ Experience Questionnaire (W-DEQ) version A:

It was adapted and utilized by the researchers. It is an established evaluative tool utilized to

assess fear of birth during gestation **(Wijma et al., 1998).** The W-DEQ is a self-evaluation measure, which included 6 main domains with 33 statements were included: How do you think your labour and delivery will turn out as a whole? (2 statements), How do you think you will feel in general during the labour and delivery? (16 statements), What do you think you will feel during the labour and delivery? (6 statements), what do you think will happen when labour is most intense? (3 statements), How do you imagine it will feel the very moment you deliver the baby? (4 statements) and Have you, during the last month, had fantasies about the labour and delivery (2 statements).

Each statement is scored on a 6-point Likert scale. Each response was assessed on a scale from 0, indicating "extremely," to 5, indicating "not at all." The cumulative score ranged from 0 to 165.

The W-DEQ A uses specific score ranges to assess the degree of childbirth-related fear. Scores below 37 are typically indicative of low or manageable fear, while scores ranging from 38 to 84 represent moderate fear levels. Scores between 85 and 99 reflect high fear levels, and scores above 100 signify severe fear, often identified as tokophobia.

Validity and Reliability of tools:

The content validity of the tools was assessed through the evaluation of a jury consisting of five experts in obstetric, gynecologic, and psychiatric nursing. Subsequent modifications were made as deemed necessary. The Cronbach's alpha value recorded for the Kessler Psychological Distress Scale (tool II) stands at 0.893, while the Wijma Delivery Expectancy/Experience Questionnaire (tool III) exhibits a value of 0.901.

Ethical consideration:

Before data collection, official permission was obtained from the Committee of Ethics Scientific Research at the Faculty of Nursing, Kafr El-Shaikh University, to validate the tools and the study. Then, primigravida women provided written informed consent after thoroughly explaining the study's objectives. The privacy of the participants was assured, and the confidentiality of the gathered data was upheld. Additionally, each woman was duly informed that her involvement in the research was entirely voluntary and that she retained the autonomy to withdraw at any moment.

Pilot study:

A pilot study was conducted on a subset of the overall study population, precisely 10% of the participants (consisting of 8 primigravida women), who were subsequently removed from the primary study sample. The purpose of this pilot study was to assess the suitability and comprehensibility of the research instruments, as well as to determine the time required for data collection. After completing the pilot study, appropriate adjustments were made to the procedures.

Method

Study preparation:

Researchers attended a five-day (20-hour) massage practice course at The Arab African Union, a governing body linked to the Ministry of Culture and Investment in Alexandria governorate, through which they obtained an officially recognized certification.

Love cards were developed through literature studies and expert tests containing positive affirmations for pregnancy and childbirth. The love card is implanted using simple language, easy to understand, in detail, and clear. Media of love cards with various images and colors create a fun, self-confident, an enjoyable and self-assured atmosphere **(Weiss,. 2022)**. The love cards were meticulously organized and assembled with the intention of enabling pregnant women to deliver positive affirmations using proper sentence structure, thus embedding them into their subconscious mind.

The researchers developed tool (I) while and tools (II) & (III) were adapted by the researchers, were rendered into the Arabic language, and employed to gather data.

Approval was obtained from the vice-dean of postgraduate studies & research at the Faculty of Nursing, Kafr El-Shaikh University to solicit consent from the relevant authorities within the study environment for data acquisition, following a thorough exposition of the study's aims.

Study Assessment

At the commencement, a researchers encountered primigravida women while awaiting their turn at the antenatal clinic. The researchers proceeded to introduce themselves and provide a detailed explanation of the study's title and purpose. Subsequently, the researchers interviewed each woman to complete the designated schedule (I).

Following this, a group of 80 primigravida women was chosen to partake in the intervention based on the established inclusion criteria, where they were subsequently and evenly allocated into two distinct research groups: Group I (self-affirmation) consisted of 40 primigravida women who received instruction to engage in positive affirmation alongside deep breathing exercises. Meanwhile, Group II (back massage) comprised 40 primigravida women who underwent back massage therapy.

In addition, the researchers proceeded to assess the psychological distress and fear of birth in both groups before initiating the implementation of positive affirmation in group I and the application of back massage in group II, utilizing tools (II) and (III), respectively.

Study Implementation*:*

Data collection encompassed twelve months, spanning from the midpoint of June to the midpoint of June 2024.The researchers guaranteed the surroundings were pristine, adequately aerated, and devoid of disturbances. Then, the researcher personally engaged with each woman and provided instructions for emptying her bladder, removing any restrictive garments.

In the group I:

Self-affirmation was conducted throughout four sessions and seamlessly integrated into the weekly curriculum for primigravida women.

Sessions	Positive affirmations sentence	Time
First session	❖ The first session started at 24 weeks of gestation ❖ The researchers advised primigravida women to adopt a comfortable stance such as sitting on a chair or reclining sideways with a cushion placed between the legs, closing the eyes, achieving a state of bodily relaxation, and engage in the act of inhaling slowly through the nostrils followed by a deliberate exhalation through slightly pursed lips **(Smith, 2018; Ankrom, 2022; Ormandy, 2023).** ❖ Then, the researcher employed a love card intervention that included a wide range of positive affirmations encompassing various topics such as breathing techniques, pregnancy, childbirth, and breastfeeding. ❖ After that, primigravida women were presented with love cards and repeated it and asking the primigravida women to practice alone twice per diem, be it upon awakening, prior to slumber. For example: • I trust my body. • From now, I know how to take care of myself in pregnancy. • My pregnant body is beautiful. • I am a good mother. • I believe in myself and I have nothing to fear The Love Card, specifically devised for primigravida women, aims to encapsulate constructive affirmations that foster the practice of daily self-empowerment.	10 minutes 10 minutes
Second session	The researchers ensured that the primigravida women complained the previous sentences before starting the second session Engaging breathing exercise as previously mentioned Then, the researcher employed a love card intervention incorporating positive affirmations as previously mentioned. For example: • My body knows how to give birth. • My body knows when to give birth • I love my baby. My baby loves me • I trust in my ability to birth my baby. • I accept the help of others.	10 minutes 10 minutes

Sessions	Positive affirmations sentence	Time
Third session	Engaging breathing exercise as previously mentioned Then, the researcher employed a love card intervention incorporating positive affirmations as previously mentioned. For example: • My baby will find the perfect position for birth. • My body will birth my baby safely and effectively. • My baby senses the peace and safety that I feel. • Birth is a joyful event. • Courage and patience are required to joyfully send my child into loving arms.	10 minutes 10 minutes
Fourth session	Doing breathing exercise as previously mentioned Then, the researcher employed a love card intervention incorporating positive affirmations as previously mentioned. For example: • Contractions help bring my baby to me. • My cervix is opening like a flower. • I know how to take care of my baby. • I will make plenty of breast milk for my baby. • I deserve a positive birth. I deserve this birth!	10 minutes 10 minutes

The researchers asked primigrvida women to repeat the sentences until they master them. They were given the opportunity to inquire about the intervention. Also, love cards images were shared with primigrvida women to remind them of the steps.

In the group II:

The back massage was administered throughout four sessions, each lasting 10 minutes. These sessions were conducted on a weekly basis. In each session, the researchers met every woman individually in examination room of the antenatal clinic and proceeded to cleanse her hands and subsequently applied (70-80%) Alcohol-based Hand rubs. Then, the researchers proceeded to employ manual techniques involving the heel of the hands, employing a series of movements along the spinal column. This involved utilizing the palms to perform rhythmic motions from the upper region of the shoulder blade to the vertebral column. Additionally, the researchers applied pressure using the fingertips along both sides of the spinal column, extending from the neck to the vertebral column, and subsequently proceeded to stroke in an upward direction, beginning from the hip region and progressing towards the neck.

The researchers also engaged in stroking the trapezius muscles located in the shoulders. Furthermore, the researchers gradually moved upwards along the back by employing fingertips positioned on either side of the spinal column, commencing from the hipbone and extending to the neck, followed by a reversal in direction, employing a downward motion utilizing the fingertips in a raking manner. Moreover, the researchers engaged in massaging the lower back, commencing from the vertebral column and extending across the waistline, employing the heel of the palm to execute large circular motions. Finally, the researchers conducted long and smooth gliding strokes, originating from the hip region, traversing upwards, and concluding over the shoulder area **(El-Hosary et al,. 2016; Nair, 2020).**

After the completion of the procedure, the researchers provided assistance to the woman in assuming a position that would optimize her comfort while simultaneously advising against immediate standing as a means to avert the occurrence of postural hypotension.

The researchers comprehensively monitored the primigravida women in both groups via telephone or WhatsApp to ascertain their compliance with the intervention and if any problems arose during the study.

Study Evaluation:

The researchers performed evaluation of the levels of psychological distress and fear associated with childbirth for both groups on three separate occasions. The first follow-up assessment occurred four weeks after the initial evaluation, followed by a second assessment six weeks from the onset, and a third assessment eight weeks from the onset using tools (II) and (III). Then, the effect of self-

affirmation versus back massage on psychological distress and fear of birth was determined by comparing the levels of psychological distress and fear of birth between the two groups before and following the intervention.

Statistical analysis*:*

The Statistical Package for Social Sciences (SPSS) version 25 program was utilized for the purpose of data analysis. The data that had been gathered underwent processes such as categorization, coding, computerization, tabulation, and examination. Categorical data was described and summarized through the utilization of frequency and distribution. To investigate the associations between variables, cross-tabulation with percentages was employed. Appropriate tests, such as Chi-square at a significance level of 0.05, were utilized to determine statistical significance.

Results

As shown in **Table (1),** there were no statistically significant differences in the demographic or obstetric characteristics between the groups. **Age** distribution indicated that 30% of women in the self-affirmation group were aged 31–35, compared to 52.5% in the back massage group, with mean ages of 27.3 ± 3.2 years and 28.8 ± 4.2 years, respectively (p=0.076). **Occupational** status was also similar across groups, with the majority being employed (55.0% in the self-affirmation group and 60.0% in the back massage group; p=0.743). **Education** levels were comparable, with most participants having at least a secondary education (p=0.655). **Residence** data showed a slightly higher proportion of urban residents in the back massage group (60.0%) compared to the self-affirmation group (45.0%), though this difference was not statistically significant (p=0.179). The frequency of **follow-up visits** varied somewhat, with a higher percentage of women in the back massage group attending three visits (35.0%) compared to 15.0% in the self-affirmation group; however, this difference also lacked statistical significance (p=0.116).

Figure (1) exhibits the distribution of Self-Affirmation and Back Massage Primigravida Groups According to their psychological distress level Over Time. At the **Pre-Test**, nearly all primigravidae reported moderate distress in both groups. In the self-affirmation group, 95% experienced moderate distress, 5% had mild distress, and none were classified as psychologically well. Similarly, in the back massage group, 97.5% reported moderate distress, 2.5% had mild distress, and no one was psychologically well.

By the **4 Weeks Post-Test**, the self-affirmation group began to show signs of improvement. Moderate distress decreased to 60%, mild distress increased to 25%, and 15% of primigravidae were now psychologically well. In contrast, the back massage group showed a smaller change, with 82.5% still experiencing moderate distress, 17.5% in mild distress, and no primigravidae in the psychologically well category.

At the **6 Weeks Post-Test**, both groups showed further improvements, but the self-affirmation group had a greater shift toward psychological well-being. In this group, 75% reported mild distress, 15% were psychologically well, and only 10% experienced moderate distress. The back massage group, meanwhile, had 70% in mild distress, 30% in moderate distress, and still no primigravidae classified as psychologically well.

By the **8 Weeks Post-Test**, self-affirmation continued to have a positive impact on primigravidae' psychological states, with 80% reporting mild distress, 20% psychologically well, and no one in moderate distress. The back massage group also showed improvement, with 75% experiencing mild distress, 25% still in moderate distress, and no primigravidae classified as psychologically well.

The statistical analysis reveals that at the **Pre-Test** stage, there was no significant difference between the groups in terms of psychological distress (P = 0.556). However, starting from the **4 Weeks** Post-Test, significant differences emerged, with the self-affirmation group showing a greater reduction in distress and an increase in psychological well-being. **By 8 weeks**, both interventions had a significant effect on reducing distress levels, with self-affirmation showing a particularly strong impact (P < 0.001).

Figure (2) displays the distribution of Self-Affirmation and Back Massage Primigravida

Groups According to their Fear of Birth level Over Time At the beginning (Pre-Test), most primigravidae in both groups reported high fear levels. In the self-affirmation group, 80% experienced high fear, while 20% reported low fear, with no moderate fear present. The back massage group had even higher fear levels, with 92.5% experiencing high fear, 7.5% moderate fear, and no reports of low fear.

After 4 weeks, fear levels began to drop in both groups. For self-affirmation, the percentage of primigravidae with high fear decreased to 55%, while moderate fear emerged at 25%, and low fear increased to 20%. In the back massage group, high fear dropped to 67.5%, with 32.5% now experiencing moderate fear and still no low fear reported.

By 6 weeks, self-affirmation showed a more significant reduction in high fear, which fell to 22.5%. The proportion of primigravidae with low fear increased to 57.5%, while 20% reported moderate fear. For back massage, high fear continued to decrease to 47.5%, with 52.5% experiencing moderate fear, but still no primigravidae in the low fear category.

At the 8-week mark, self-affirmation had a pronounced effect on fear reduction. No primigravidae in this group reported high fear, 30% reported moderate fear, and the majority (70%) had low fear. The back massage group also showed improvement, with high fear dropping further to 42.5%, moderate fear rising slightly to 57.5%, and still no primigravidae with low fear.

The statistical analysis confirms that, initially (**Pre-Test**), there was no significant difference between the groups in terms of fear levels ($P = 0.267$). However, from **4 weeks** onward, significant differences emerged, with self-affirmation showing a stronger effect on reducing fear. By **8 weeks**, both interventions showed statistically significant improvements, but the impact of self-affirmation was particularly striking ($P < 0.001$).

Table (1): Distribution of Self-Affirmation and Back Massage Primigravida Groups According to their demographic and Obstetric Data (N=80)

Demographic and Obstetric Data	Self – Affirmation n=40		Back Massage n=40		Chi-Square / fisher's exact test	
Age (years)	**No**	**%**	**No**	**%**	**X^2**	**P**
20 –	15	37.5	8	20.0	4.752	0.093
26 –	13	32.5	11	27.5		
31 – 35	12	30.0	21	52.5		
Mean ±SD	27.3 ±3.2		28.8 ±4.2		1.796	0.076
Occupation						
Housewife	12	30.0	9	22.5	0.592	0.743
Worker	6	15.0	7	17.5		
Employee	22	55.0	24	60.0		
Education						
Read &write	3	7.5	5	12.5	2.437	0.655
Primary	8	20	4	10		
Secondary	10	25.0	12	30.0		
University Education	11	27.5	9	22.5		
Postgraduate	8	20	10	25		
Residence						
Urban	18	45.0	24	60.0	1.805	0.179
Rural	22	55.0	16	40.0		
Follow – Up Visits						
3 Visits	6	15.0	14	35.0	4.317	0.116
4 Visits	18	45.0	13	32.5		
5 Visits	16	40.0	13	32.5		

Tests used: Chi-Square / fisher's exact test

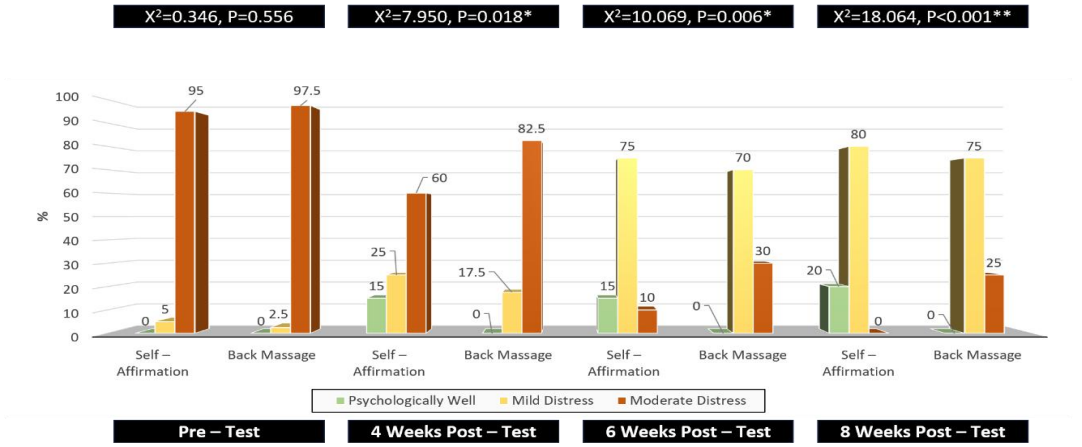

Figure (1): Distribution of Self-Affirmation and Back Massage Primigravida Groups According to their psychological distress level Over Time (N=80)

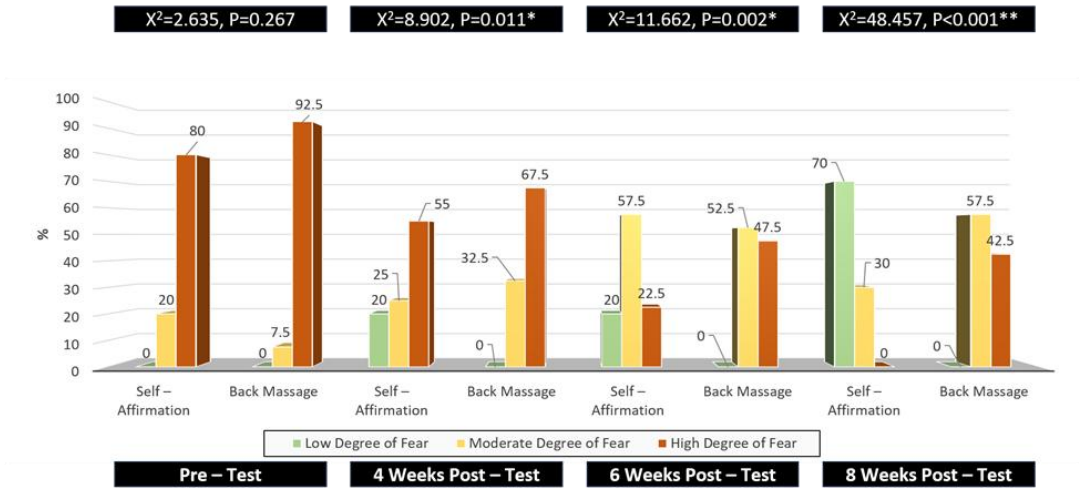

Figure (2): Distribution of Self-Affirmation and Back Massage Primigravida Groups According to their Fear of Birth level Over Time (N=80)

Discussion

Pregnancy-related distress can affect certain women. Pregnancy can change the body's metabolism, biochemistry, physiology, hematology, immune system, and psychological state. Gonadal hormone fluctuations are a hallmark of pregnancy. This condition affects the behavior of women who could not adapt to it **(Ayu et al., 2019)**. The pregnant woman exhibits significant physiological changes to support and accommodate the growth of the fetus. These changes start after conception and affect every organ to make the body adapted toward pregnancy. Some women may not be aware of how stressful these circumstances are **(Soma-Pillay et al., 2016).**

In addition, a mother might be concerned about her condition for a variety of reasons, including fear of miscarriage, fear of abnormal fetal development, fear of childbirth, fear of being unable to give birth typically, hearing too often about other people's negative experiences during childbirth, fear of pain, and the knowledge that pain during childbirth will also result in stress and anxiety **(Pilkington & Bedford-Dyer, 2021)**. Therefore, fear of childbirth is unavoidable for pregnant women as they set out on what they believe to be a life-defying journey to motherhood **(Mortazavi & Agah, 2018).** The

current study aimed to examine the effects of self-affirmation versus back massage on psychological distress and fear of birth among primigravida women.

The results of the present study supported and accepted the research hypotheses: **H1: Primigravida women who practice self-affirmation during the third trimester exhibit less psychological distress level than those who receive back massage. H2: Primigravida women who practice self-affirmation during the third trimester exhibit decreased level of fear of birth than those who receive back massages**.

The current study results revealed that the self-affirmation group generally exhibited better psychological well-being and mild levels of distress compared to the Back Massage group, particularly at the later time points (4 weeks ,6 Weeks and 8 Weeks Post-Test). This could be attributed to the fact that positive affirmations by love card involve internalizing positive traits and beliefs about oneself which significantly affects negative feelings such as stress, anxiety and fear, while back messaging involves seeking external validation and support **(Mays & Zhao, 2016).** Moreover, **(Runjati & Annisa Septy, 2021)** study entitled "the Impact of Self -Affirmation Towards Stress and Anxiety Levels of Pregnant Women". They reported that pregnant women who practice self-affirmation can increase their confidence in dealing with pregnancy, childbirth, and parenthood difficulties. Affirmations that focus on women's resilience, strengths, and capacity to manage difficulties can empower them and ease their feelings of distress and self-doubt. By practicing positive affirmations, women can turn their ideas away from fear-inducing tactics and instead focus on positive outcomes and their capability to cope with challenges and consequently decrease their levels of psychological distress.

Consistent with current study, it was reported that positive affirmative sentences, such as "My pregnancy is good," "Birth is a joyful event," "I trust my body" and similar expressions, have been reported to help pregnant women feel more confident and less stressed. These findings are agreed with(**Nurcahyani, Runjati& Nugraheni, 2020**) to investigate giving belly breathing technique and positive affirmation of stress and cortisol hormone levels in third trimester pregnant women . They found that belly breathing techniques and positive affirmations 4 times in 2 weeks with a duration of 20 minutes effect on stress reduction and cortisol levels in pregnant women.

These results may be attributed to positive thoughts can increase blood flow so that stress can be reduced. Furthermore, it was found that with abdominal breathing and positive affirmation, pregnant women can benefit from a soothing impact, enhanced parasympathetic function, and increased oxytocin production, which lowers cortisol levels. This intervention aims to help the mother and the fetus become physically and mentally prepared. Breathing exercises also help with memory, eye issues, insomnia, pent-up thoughts and emotions, stress reduction, easing anxiety and depression **(Runjati & Annisa Septy, 2021; Salafas et al., 2016).**

The current study's findings were in consistent with **Park, & Lee, (2024)** who conducted study to examine the impact of prenatal massage experience upon the mother's delivery confidence and stress/ anxiety**.** They indicating lower stress and anxiety scores among pregnant women with prenatal massage experience which align with previous research findings and confirm the significant effect of prenatal massage. In the same line **(Aswitami,et al 2022)** study about the effect of pregnancy massage on pregnant mother's anxiety before labor. They showed that after four weeks of intervention, pregnancy massage significantly reduced anxiety in both groups. Respondents in the therapy group reported feeling more at ease, sleeping better, and not worrying about getting pregnant. This is in line with the idea that prenatal massage helps lower anxiety in expectant mothers by increasing blood flow and triggering the production of endorphins.

Similarly, **Rizki, L.K., Masruroh, N., Rahayu, E.P. (2023).** Who study about effects of self-affirmation and positive visualization therapy for anxiety in 3rd-trimester pregnant women during the pandemic. They concluded that using self-affirmation and positive visual imagery significantly reduced anxiety in third-trimester pregnant women during the pandemic .Also, utilizing flashcards to provide affirmations allow

mothers to be more likely to respect themselves, resulting in fewer negative thoughts about childbirth during a pandemic.

According to the study's findings, the self-affirmation group generally had lower levels of fear and higher proportions of participants reporting low levels of fear compared to the back massage group, particularly at the later time points (4 weeks, 6 Weeks and 8 Weeks Post-Test). This reflects the efficiency of self-affirmation rather than a back massage in decreasing negative thoughts about childbirth, eventually alleviating the fear of childbirth.

These findings are explained by the fact that Positive affirmations affect regulating limbic system activity by producing opioids, serotonin, and GABA (gamma-aminobutyric acid) which is the primary inhibitory neurotransmitter in the brain that lessens the ability of a nerve cell to receive, create or send chemical messages to other nerve cells. GABA is known for producing a calming effect. It's thought to play a major role in controlling fear and anxiety. On the other hand, affirmations are used as reinforcement and reprogramming the subconscious mind and removing false beliefs through giving positive opinions, truly acknowledge, and make a positive pregnancy **Sukesi N, (2017).**

Conclusion

The findings indicated that the self-affirmation group generally exhibited better psychological well-being, lower distress levels than the back massage group, particularly at later time points. On the other hand self-affirmation had a pronounced effect on fear reduction. No primigravidae in this group reported high fear compared to back massage group**.**

Recommendations

Based on the current study's findings, the following are recommended:

Incorporate self-affirmation into the policy of antenatal care to improve psychological distress and fear of birth among pregnant women.

Raise awareness of pregnant women regarding the benefits of self-affirmation to improve their psychological health.

Integrate self-affirmation into the obstetrics and gynecology curricula across various educational settings to relieve psychological distress of pregnant women.

Further research is required to:

Evaluate the efficacy of interventions and support programs for pregnant women in lessening psychological distress and fear of birth. This can help determine areas for improvement and inform evidence-based practice.

Repeat the current investigation with larger sample sizes and diverse populations is needed to improve the generalizability of the findings

Acknowledgments

The researchers are grateful to all participants in this study.

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