

Effectiveness of the Gladdy Moddy intervention in enhancing parental readiness and maternal-fetal attachment

Rufidah Maulina^{1*}, Revi Gama Hatta Novika^{1,2}, Atriany Nilam Sari¹, Luluk Fajria Maulida¹, Siti Nurhidayati¹, Nurul Jannatul Wahidah¹

Abstract

Purpose: This study aims to assess the impact of Gladdy Moddy (Glad Mom and Daddy), an intervention comprising education, a gratitude journal, and a support group, on maternal-fetal attachment and parental readiness. **Methods:** This research was conducted from June to July 2024 in the villages of Trengguli and Sidomukti, under the jurisdiction of the Jenawi Health Center in Karanganyar. A pre-experimental design with a one-group pre-test and post-test was employed. A total of 23 couples were recruited using purposive sampling. **Results:** Initial scores for mother-fetus bonding, measured using the Prenatal Attachment Inventory (PAI), were 59.2, while scores for parental readiness, measured by the Maturity to Parenthood Scale (MPS), were 140.7. Post-test results indicated a significant increase, with PAI scores rising to 64.5 and MPS scores to 149.4. Bivariate analysis using a paired t-test revealed significance levels of 0.028 ($p < 0.05$) for PAI and 0.020 ($p < 0.05$) for MPS. **Conclusion:** The Gladdy Moddy intervention had a significant positive impact on prenatal attachment and parental readiness among mothers. This approach can be effectively used to prepare couples for parenthood and enhance the bond between mother and fetus.

Keywords: bonding; maternal-fetal attachment; parents; pregnant women; readiness

Submitted:

December 25th, 2024

Accepted:

April 17th, 2025

Published:

April 30th, 2025

¹Midwifery Study Program,
Faculty of Medicine,
Universitas Sebelas Maret,
Surakarta, Central Java,
Indonesia

²Master of Public Health Study
Program, Graduate School,
Universitas Sebelas Maret,
Surakarta, Central Java,
Indonesia

*Correspondence:

maulinarufidah@staff.uns.
ac.id

INTRODUCTION

Parental readiness is crucial during the perinatal period for both mothers and fathers, as it significantly influences the well-being of the mother, the baby, and the overall family. The maturity to parenthood scale (MPS) is often used to assess the readiness of individuals during transition into their roles as parents, highlighting the importance of emotional, psychological, and practical preparedness [1]. Studies have demonstrated that when parents, particularly mothers, exhibit high levels of readiness, it significantly contributes to maternal-fetal attachment and fosters a supportive environment for the child's development [2]. Fathers' involvement is also equally crucial, as their

readiness is linked to enhanced emotional support for the mother and active participation in the early stages of the child's life [3] [4]. Conversely, a lack of readiness in either parent can lead to adverse outcomes, including increased anxiety and poor parent-child bonding [5,6].

In addition, the presence of a husband plays a role in increasing knowledge of pregnant women's health, birth planning, and preventing complications, as well as maternal-fetal attachment. Several researchers have demonstrated that maternal prenatal attachment plays a crucial role in shaping the child's perception of themselves as a human being and in fostering the development of attachment between mother and baby in the future. A recent systematic review of 41 studies

reported that poor prenatal attachment is associated with low prenatal maternal-fetal self-representation and self-care, low postnatal attachment up to 24 months postpartum, and early childhood developmental problems, including emotional self-regulation, behavioral, and cognitive difficulties [7].

To address this issue, prenatal education programs, a common practice performed by primary health centers, hospitals, midwives, and community health workers, can be one solution to form maternal-fetal attachment, as well as to build parental readiness [8]. Initially, prenatal education aims to increase knowledge and skills about pregnancy, childbirth, maternity care, and newborn care [9]. As many as 83.5% of registered community health centers in Indonesia reported conducting classes for pregnant women in 2021 [10]. This number is higher than in 2020, which was 69.9%. Meanwhile, in Central Java, prenatal education coverage is below average, which was 79.3% [10].

Prenatal education coverage was not the only issue in Central Java, in terms of educating parents on prenatal attachment and readiness for parenthood, the lack of participation from husbands and families has further weakened the effectiveness of these classes [11]. Low involvement and support from the family, especially husbands, in implementing pregnant women's classes has been proven to influence the participation of pregnant women in classes [12–16].

The study was conducted in Desa Trengguli and Sidomukti, two villages under the jurisdiction of Puskesmas Jenawi, Karanganyar, which represent rural areas with limited access to comprehensive prenatal education, particularly in terms of psychological support and partner involvement. In this region, early marriages and adolescent pregnancies are common, often leading to pregnancies in women under the age of 20. As a result, many expectant mothers have not yet developed the emotional and psychological readiness required for effective parenting. Additionally, low coverage of husband participation in antenatal programs has been reported by local health workers, which weakens maternal support systems and affects maternal-fetal bonding. These contextual challenges make Jenawi an appropriate and high-need setting for implementing and evaluating the Gladdy Moddy intervention, which aims to strengthen both maternal-fetal attachment and parental readiness through gratitude journaling and planned couple activities.

Therefore, Gladdy Moddy Innovation was created as the solution to integrate a more psychological approach and build readiness among parents. It contains

gratitude prenatal classes, gratitude journaling, and a planned activity, followed by 2-week online group chat. This program has also primarily followed a universal approach, providing standardized material to women of all gestational ages without tailoring content to address specific maternal needs or focusing on critical issues such as maternal morbidity and mortality [17].

Gratitude journaling, in particular, is a valuable tool for managing stress and promoting positive emotional regulation, especially in highly stressful and uncertain situations such as pregnancy. Gratitude, which is defined as the ability to appreciate and value positive aspects of life [18], has been linked to improved emotional well-being, stronger social relationships, and a higher quality of life [19–21]. By integrating gratitude interventions into parental classes, expectant parents may experience increased emotional resilience, a sense of meaningfulness, and sustained positive effects, ultimately contributing to improved parental readiness and a more profound maternal-fetal attachment [22]. Moreover, structured, planned activities can help parents meet specific developmental needs, such as support in parenthood, promoting maternal-fetal attachment, and creating an environment of shared responsibility between mothers and fathers.

In light of these challenges, integrating innovative interventions such as gratitude journaling and structured planned activities into prenatal classes offers a promising solution to enhance parental readiness and maternal-fetal attachment. By addressing both the emotional and practical aspects of parenthood, these interventions not only equip expectant parents with the tools to manage stress and build emotional resilience but also foster stronger bonds between parents and their unborn children. Furthermore, involving fathers in these interventions is critical to ensuring shared responsibility and support, which are essential for a healthy family dynamic. This comprehensive approach has the potential to fill the gaps left by traditional prenatal education, ultimately improving outcomes for both parents and their children. This study aims to assess the impact of Gladdy Moddy (Glad Mom and Daddy), an intervention comprising education, a gratitude journal, and a support group, on maternal-fetal attachment and parental readiness.

METHODS

This is a single-group pretest–posttest experimental design. Participants were pregnant women whose gestational age was in the first and third trimesters. This research was conducted from June to July 2024 in the villages of Trengguli and Sidomukti, under the

jurisdiction of the Jenawi Health Center in Karanganyar. Participants were excluded from the study if they did not live in the same house or if their husbands went overseas. Sample selection was carried out using a purposive sampling technique. The total respondents in this study was 23. A questionnaire comprising 10 questions was used to collect women's socio-demographic information, including age, obstetric data, and socioeconomic status. Prenatal attachment was measured by the Indonesian version of the Prenatal Attachment Inventory (PAI). It includes 20 items that describe the mother's feelings, thoughts, and relationship with the fetus. Each item is rated on a 4-point scale ranging from 1 (rarely) to 4 (always). Readiness to become parents measured using the standardized Maturity to Parenthood Scale (MPS) [1]. It contains 24 items that describe valence, behavioral, and cognitive-emotional maturity to parenthood. Each item is rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). The data were analyzed by testing the hypothesis using the SPSS for Windows, release 22.0, computer program. The statistical test used was a paired t-test.



Figure 1. Flow activities

Figure 1 illustrates the flow of activities in this study. It begins with establishing a shared understanding of the activity's purpose and objectives, followed by the coordination of the activity plan. Research assistants act as facilitators, assisting pregnant women and their husbands who participate in the Gladdy Moddy program. The community service activities were conducted twice, consisting of one counseling session and one mentoring session, both facilitated online.

Participants were first given pre-tests using the Maturity to Parenthood Scale (MPS) and the Parental Attachment Inventory (PAI) to assess readiness for parenthood and maternal-fetal attachment. During the pregnant women's class, mother-father pairs received materials on topics such as husband bonding behaviors, baby care, child growth and development, emotional nurturing, breastfeeding, complementary feeding, and pregnancy. Additionally, they were provided with an "I'm Ready to be a Parent" booklet, which included information on parental readiness, a gratitude journal, and a planning activity.

The couple took the booklet home to complete together, and every other day, facilitators reviewed the material with them, reminding the couple to write in

the gratitude journal and plan activities together. The Gratitude Journal and Planning Activity were evaluated during the next meeting, where couples brought their completed booklets for assessment based on their entries and activities. Finally, post-tests using the MPS and PAI questionnaires were administered to reassess parental readiness and maternal-fetal attachment. Data analysis was conducted using hypothesis testing in SPSS for Windows, version 22.0. The statistical method employed was a paired t-test. This study obtained an ethical code from Moewardi Hospital, numbered 1.443/VI/HREC/2024.

RESULTS

Table 1 represents the data collected from 23 respondents, with a mean age of 27.85 years and a standard deviation of 6.52. In terms of parity, the majority of respondents were multiparous (56.5%), while the rest were nulliparous (43.5%). Regarding gestational age, the distribution of respondents was relatively even with 17.4% in the first trimester, 47.8% in the second trimester, and 34.8% in the third trimester. Most pregnancies were planned (91.3%), and only 8.7% were unplanned.

In terms of education, the majority of respondents had a high school education (69.6%), followed by junior high school (21.7%), and a degree (8.7%). There were no respondents with only a primary school education. 52.2% of respondents had a family income above the Karanganyar minimum wage, while 47.7% were below the minimum wage. The majority of respondents were housewives (69.6%), followed by private workers (26.1%), and only 4.3% worked as civil servants. In terms of residence, 56.5% of respondents lived with their husbands and 43.5% lived with extended family. A total of 30.4% of respondents had a history of miscarriage, while 69.6% did not. Only 8.33% of respondents experienced pregnancy complications, while 91.67% did not experience such complications.

Based on the skewness and kurtosis values (Table 2), all four variables (PAI pre-test, PAI post-test, MPS pre-test, and MPS post-test) are approximately normally distributed. Therefore, it is statistically acceptable to use parametric tests such as the paired t-test for analyzing pre- and post-intervention differences in maternal-fetal attachment and parental readiness.

Based on the bivariate analysis using paired t-test (Table 3), there were significant differences between pre- and post-intervention in maternal-fetal attachment and parenting readiness. These findings indicate that the Gladdy Moddy intervention effectively enhanced both emotional bonding between mother and fetus and psychological preparedness for parenthood.

Table 1. Sociodemographic and pregnancy characteristics of the study population

Characteristics	n	%
Age (years)		
<20	0	0
20-35	21	91.3
>35	2	8.7
Parity		
Primipara	10	43.5
Multipara	13	56.5
Gestational age (trimester)		
First	4	17.4
Second	11	47.8
Third	8	34.8
Pregnancy planning		
Planned	21	91.3
Unplanned	2	8.7
Education		
Junior High School	5	21.7
Senior High School	16	69.6
University	2	8.7
Family income		
<minimum wage	11	47.8
>minimum wage	12	52.2
Profession		
Housewives	16	69.6
Private workers	6	26.1
Civil servants	1	4.3
Health insurance		
Yes	20	87
No	3	13
Living arrangement		
With husband	13	56.5
With family	10	43.5
History of pregnancy loss		
Yes	7	30.4
No	16	69.6
History of complication		
Yes	1	4.3
No	22	95.7
Disease during pregnancy		
Yes	9	39.1
No	14	60.9

Table 2. Normality test of prenatal-attachment inventory and maturity to parenthood scale

Variable	Skewness (z)	Kurtosis (z)	Distribution
PAI_pre	-0.097	-0.652	Normal
PAI_post	-0.394	-0.467	Normal
MPS_pre	-0.024	-1.306	Normal
MPS_post	-1.027	0.797	Slightly skewed, acceptable

PAI: prenatal-attachment inventory; MPS: maturity to parenthood scale

Table 3. The effect of Gladdy Moddy on maternal-fetal attachment and parental readiness

Variable	PAI		95% CI	p-value
	Pre-test	Post-test		
Prenatal-Attachment Inventory (PAI)	59.26 ± 10.02	64.52 ± 6.84	(-9.904) – (-0.618)	0.028*
Maturity to Parenthood Scale (MPS)	140.74 ± 14.39	149.43 ± 11.74	(-15.886) – (-1.505)	0.020*

*p<0.05

DISCUSSION

This study demonstrated that the Gladdy Moddy intervention, which combines gratitude journaling and planned activity, significantly improved both maternal-fetal attachment and parental readiness among pregnant women. This was the first study to assess these components in a single intervention program involving both mothers and fathers. It also addresses a gap in the literature regarding the implementation of mental health-focused pregnancy classes in Indonesia, particularly those that include co-parenting strategies.

In terms of parenting readiness, this study shows that Gladdy Moody increased parenting readiness from a mean score of 140.74 to 149.43 ($p < 0.05$). The transition into parenthood is an extraordinary life change for many individuals. Parenting readiness requires emotional, cognitive, and practical preparation. Through the Gladdy Moddy intervention, both mothers and fathers were invited to explore activities they could do together, build their roles as co-parents during pregnancy, and create a more stable emotional environment for the mother through the supportive presence of the father. This structured activity helped pregnant women feel more connected to their unborn baby and more confident in their parenting abilities. After the intervention, a significant increase in parenting readiness was observed among the participants. These findings were supported by previous studies showing that emotional support during pregnancy can meaningfully enhance parenting readiness [23,24], making Gladdy Moddy a valuable complement to conventional antenatal education.

In the Jenawi Health Center area, the average person gets married or pregnant after high school. This results in many babies being born to mothers who are less than 20 years old. Therefore, by observing the current sociocultural context in Puskesmas Jenawi, it is crucial to explore the transition to parenthood in young adults. The questionnaire used in this community service is the Maturity to Parenthood Scale (MPS), which is used to assess an individual's readiness to become a parent. This readiness encompasses various aspects that are crucial in supporting the roles and responsibilities of parenthood.

This study also found that there was an increase in the mean score of maternal-fetal attachment (from 59.26 to 64.52), suggesting that prenatal attachment improved after the intervention. This positive change suggests that components of Gladdy Moddy intervention played a meaningful role in enhancing emotional connection between mothers and unborn babies. The gratitude journal and planned activities may have helped participants focus on positive experiences and emotional bonding [25,26].

For pregnant women, maternal-fetal attachment can increase overall wellbeing [27,28]. Pregnant women tend to develop their bonds with baby by talking, thinking of them and sensing the fetal developing inside their body [29]. Research underscores the positive relationship between mental well-being and various factors, such as psychological and physical health [30]. In the context of parental mental health, it becomes clear that stress, negative feelings about their children, as well as lower involvement with the child can negatively impact their well-being [31]. Previous study reported that maternal anxiety impaired the quality of maternal-fetal attachment [32]. On the other hand, hope and resiliency, as positive factors of someone's personality development have a positive impact towards maternal-fetal attachment [33].

Gladdy Moddy is presented as an intervention designed to help mothers develop mother-baby bonding through the involvement of the father. In various activities, such as gratitude journaling and planned activities, both mothers and fathers were invited to explore and learn about their roles in parenthood. The emotional and physical presence of the husband created a supportive and comforting environment for the mother, allowing her to feel more secure and connected. This supportive atmosphere contributed significantly to strengthening the bond between mother and fetus [34].

Gratitude is defined as a powerful tool for recognizing and appreciating the positive aspects of life. Engaging in this practice creates a sense of

happiness and enhances overall well-being. Previous studies reveal that individuals who consistently maintain gratitude journals experience elevated levels of both subjective and psychological well-being [35]. Writing about gratitude can improve life satisfaction and happiness while alleviating feelings of hopelessness, depression, and anxiety [36]. Some pregnant women may find it challenging to identify aspects of their lives for which they are grateful, however this exercise often discovers them to previously unnoticed positive aspects of their lives. In terms of writing gratitude between husband and wife, a gratitude journal can lead to recalling and writing of what they are feeling towards each other, hence contributing to enhanced well-being [37]. This study used a gratitude journal written by a pregnant mother and her husband. Based on previous findings, gratitude enhances well-being by fostering positive cognitive states, reducing negative thoughts like overthinking and worry, and increasing optimism and motivation. In a study by Kerr et al. [38], individuals awaiting treatment at an outpatient psychology clinic were asked to either list five things they were grateful for daily or keep a mood diary for 14 days. The gratitude exercise significantly reduced anxiety, unlike the control task. Geraghty et al. [39] replicated these findings with an online community sample, where participants who listed six daily gratitude items also experienced reduced anxiety over 14 days.

This study also uses activity plans written by the expected mother and her husband. The mother-to-be and her husband are expected to write a plan of activities they will do together in two week. These joint activities can also vary, from vacations, traveling, to light activities such as shopping together, watching television, to small-talk or deep-talk. Even though shared activities may seem ordinary and routine, previous research has revealed that shared activities play an important role in shaping relationship satisfaction. Doing more than just shared activities has been proven to create an accommodative response that keeps relationships from conflict. Ultimately, joint activities succeed in creating satisfaction, stress relief, increased closeness and intimacy, and better relationship quality [40,41]. Joint activities also reflect a form of mutual support between partners. Therefore, it is important to integrate gratitude journaling and planned activity for both mothers and fathers in order to improve their parenting readiness and enhance their bond with unborn children.

Findings from this study show that Gladdy Moddy has the potential to be integrated into conventional prenatal education programs, such as those offered at Primary Health Care centers (*Puskesmas*) or Integrated

Service Posts (*Posyandu*). This intervention focuses not only on the mother's role but also encourages father involvement, which aligns with WHO recommendations on the importance of paternal support during pregnancy and postpartum [42]. Additionally, Gladdy Moddy was designed to be flexible and adaptable to local contexts, allowing facilitators or community health workers (*Kader*) to involve volunteers during a two-week follow-up. Planned activities can be tailored to include familiar daily routines while respecting local gender roles and family values. Gladdy Moddy can also be gradually introduced to engage fathers in a culturally sensitive way by creating safe, empowering spaces for discussion without being intrusive towards fathers.

This study was the first to assess the effects of gratitude journaling, planned activities, and educational sessions within a single program called Gladdy Moddy for couples. Additionally, it addresses the gap in the literature regarding the implementation of pregnancy classes in Indonesia, particularly in the context of mental health and parenting preparedness. However, the questionnaires, specifically the PAI and MPS, were completed only by the mothers. The husbands did not fill out the questionnaires because they believed their wives were sufficient to provide the necessary information, resulting in unintended interventions without their complete participation. Future studies should encourage husbands to participate in completing the questionnaires, not only during the intervention but also in the overall assessment process.

CONCLUSION

Gladdy Moddy intervention has been shown to improve maternal-fetal attachment and parenting readiness among mothers in Jenawi, Karanganyar. There have been many programs to increase maternal-fetal attachment and readiness to be a parent but the gratitude journal and planning activity is rarely applied. It is necessary to assess the effectiveness of gratitude journals and planned activity together with their husband to increase maternal fetal attachment and readiness to be a parent. Therefore, integrating Gladdy Moddy Intervention during monthly prenatal classes can be an option for improving readiness among parents and increasing maternal-fetal attachment. In addition, this study highlights the need of a husband as the closest person to support mother-to-be and together build good intimacy even after the baby is born. Thus, further research can assess how ready fathers are to be parents and how was their attachment to their unborn child. The role of

health workers is also important in facilitating activities like this, recognizing the difficulties that mothers may face, thereby ensuring the physical and emotional well-being of mother and baby.

ACKNOWLEDGEMENT

Lembaga Penelitian dan Pengabdian kepada Masyarakat (LPPM) Universitas Sebelas Maret funded this study under the contract number: 195.1/UN27.22/PT.01.03/2024

REFERENCES

1. Lada-Masko AB, Kaźmierczak M. Measuring and predicting maturity to parenthood: what has personality got to do with it? [Journal of Clinical Medicine](#). 2021;10(24):5802.
2. Ghodrati F, Akbarzadeh M. A Review of the Importance of maternal-fetal attachment according to the Islamic recommendations. [Journal of Midwifery and Reproductive Health](#). 2018;6(1):1193–1200.
3. de Waal N, van den Heuvel MI, Nyklíček I, Pop VJM, Boekhorst MGBM. Paternal bonding in pregnancy and early parenthood: a qualitative study in first-time fathers. [Journal of Reproductive and Infant Psychology](#). 2023; 1–16.
4. Giurgescu C, Templin TN. Father involvement and psychological well-being of pregnant women. [MCN: The American Journal of Maternal/Child Nursing](#). 2015;40(6):381–387.
5. Costa P, Andrade PR de, Tomaz BAR, Cordeiro SM, Jansen DC, Veríssimo M de LÓR. Educational workshops about bonding with the fetus during pregnancy: a clinical trial. [Revista Gaúcha de Enfermagem](#). 2021;42.
6. Suryaningsih EK, Gau ML, Kao CH, Liu CY, Kuo SY, Liaw JJ. Effect of childbirth education program on maternal anxiety: a randomized controlled trial using Roy's Adaptation Model. [Journal of Health Technology Assessment in Midwifery](#). 2023;6(1): 36–48.
7. Rollè L, Giordano M, Santoniccolo F, Trombetta T. Prenatal attachment and perinatal depression: a systematic review. [International Journal of Environmental Research and Public Health](#). 2020;17(8):2644.
8. Kovala S, Cramp AG, Xia L. Prenatal education: program content and preferred delivery method from the perspective of the expectant parents. [The Journal of Perinatal Education](#). 2016;25(4):232–241.
9. Kementrian Kesehatan RI. Pedoman pelaksanaan kelas ibu hamil. Jakarta: Kemenkes RI; 2019.

10. Kementrian Kesehatan RI. Profil Kesehatan Indonesia 2021. 2023. Available from: [\[Website\]](#)
11. Fuada N, Setyawati B. Pelaksanaan kelas ibu hamil di Indonesia. [Jurnal Kesehatan Reproduksi](#). 2016;6(2):67–75.
12. Anggraini Y, Martini M, Septiani R. Peningkatan Peran pendampingan suami/keluarga ibu hamil dalam kelas ibu di wilayah Puskesmas Margorejo Kota Metro. [Jurnal Perak Malahayati](#). 2022;4(1): 76–86.
13. Fadmiyanor I, Aryani Y, Vitriani O. Partisipasi suami dalam pelaksanaan kelas ibu hamil. [EBIMA: Jurnal Edukasi Bidan Di Masyarakat](#). 2022;4(1):29–32.
14. Syahnaz KF, Eliagita C, Absari N, Maharani E. Hubungan pengetahuan dan paritas dengan kunjungan kelas ibu hamil di wilayah Kerja Puskesmas Muara Kelingi Kabupaten Musi Rawas. [Journal Of Midwifery](#). 2024;2(4): 17–24.
15. Vianti EA, Yuniarsih SM. Pengetahuan, dukungan suami dan tingkat partisipasi ibu hamil dalam couple pregnancy class. [Jurnal EDUNursing](#). 2022;6(2):61–69.
16. Yudiati NN, Dewi IGAAN, Utarini GAE. Hubungan dukungan suami dan pengetahuan ibu hamil dengan partisipasi dalam kelas ibu hamil. [Jurnal Penelitian Perawat Profesional](#). 2024;6(6): 2571–2578.
17. Dahlan A, Marlia S, Herien Y, III Kebidanan D, Ranah Minang Stik, Asmita Dahlan K. Analisis pelaksanaan kelas ibu hamil di Puskesmas Kota Padang. [UNES Journal of Social and Economics Research](#). 2018;3(2):218–227.
18. Wood AM, Froh JJ, Geraghty AWA. Gratitude and well-being: A review and theoretical integration. [Clinical Psychology Review](#). 2010;30(7):890–905.
19. Dickens LR. Using gratitude to promote positive change: a series of meta-analyses investigating the effectiveness of gratitude interventions. [Basic and Applied Social Psychology](#). 2017;39(4):193–208.
20. Redwine L, Henry B, Pung M, Wilson K, Chinh K, Jain S, et al. A pilot study of a gratitude journaling intervention on HRV and inflammatory biomarkers in stage B heart failure patients. [Journal of Alternative and Complementary Medicine](#). 2016;22(6):A85.
21. Roche K, Mulchan S, Ayr-Volta L, Elias M, Brimacombe M, Morello C, et al. Pilot study on the impact of gratitude journaling or cognitive strategies on health care workers. [Journal of Pediatric Health Care](#). 2023;37(4):414–424.
22. Jans-Beken L, Jacobs N, Janssens M, Peeters S, Reijnders J, Lechner L, et al. Gratitude and health: An updated review. [Journal of Positive Psychology](#). 2020;15(6):743–782.
23. Negron R, Martin A, Almog M, Balbierz A, Howell EA. Social support during the postpartum period: mothers' views on needs, expectations, and mobilization of support. [Maternal and Child Health Journal](#). 2013;17(4):616–623.
24. Angley M, Divney A, Magriples U, Kershaw T. Social support, family functioning and parenting competence in adolescent parents. [Maternal and Child Health Journal](#). 2015;19(1):67–73.
25. Toprak B, Sarı T. The effects of a 2-week gratitude journaling intervention to reduce parental stress and enhance well-being: a pilot study among preschool parents. [Discover Psychology](#). 2023;3(1): 38.
26. Suzuki D, Ohashi Y, Shinohara E, Usui Y, Yamada F, Yamaji N, et al. The current concept of paternal bonding: a systematic scoping review. [Healthcare](#). 2022;10(11):2265.
27. Chauhan A, Potdar J. Maternal mental health during pregnancy: a critical review. [Cureus](#). 2022; 14(10):e30656.
28. Maulina R, Kuo SC, Liu CY, Lu YY, Khuzaiyah S, Caparros-Gonzalez RA. Does attachment and prenatal depression affect maternal health-promoting lifestyle during pregnancy? A cross-sectional study. [Clinical Epidemiology and Global Health](#). 2025;31:101904.
29. Bhamani S, Attaullah A, Malik H, Aamir FB, Syed A. maternal and fetal attachment before birth: trends in pregnant women of Urban Karachi. [International Journal on Woman Empowerment](#). 2022;8(1):14–22.
30. Smyth JM, Johnson JA, Auer BJ, Lehman E, Talamo G, Sciamanna CN. Online positive affect journaling in the improvement of mental distress and well-being in general medical patients with elevated anxiety symptoms: a preliminary randomized controlled trial. [JMIR Mental Health](#). 2018;5(4):e11290.
31. Barreto Y, Wang S, Guarnaccia U, Fogelman N, Sinha R, Chaplin T. Parent stress and observed parenting in a parent-child interaction task in a predominantly minority and low-income sample. [Archives of Pediatrics](#). 2024;9(1).
32. Göbel A, Stuhmann LY, Harder S, Schulte-Markwort M, Mudra S. The association between maternal-fetal bonding and prenatal anxiety: An explanatory analysis and systematic review. [Journal of Affective Disorders](#). 2018;239: 313–327.

33. Noroozi M, Gholami M, Mohebbi-Dehnavi Z. The relationship between hope and resilience with promoting maternal attachment to the fetus during pregnancy. [Journal of Education and Health Promotion](#). 2020;9(1):54.
34. Purwati Y, Pramono N, Hakimi M, Anggorowati A. Husband's support, anxiety and maternal-fetal attachment in pregnant women: a scoping review. [Jurnal Aisyah : Jurnal Ilmu Kesehatan](#). 2023;8(2).
35. Allan BA, Steger MF, Shin JY. Thanks? Gratitude and well-being over the Thanksgiving holiday among college students. [The Journal of Positive Psychology](#). 2013;8(2):91–102.
36. Gottlieb R, Froh J. Gratitude and happiness in adolescents: a qualitative analysis. 2021. Available from: [\[Website\]](#)
37. Fekete EM, Deichert NT. A brief gratitude writing intervention decreased stress and negative affect during the COVID-19 pandemic. [Journal of Happiness Studies](#). 2022;23(6):2427–48.
38. Kerr SL, O'Donovan A, Pepping CA. Can gratitude and kindness interventions enhance well-being in a clinical sample? [Journal of Happiness Studies](#). 2015;16(1):17–36.
39. Geraghty AWA, Wood AM, Hyland ME. Attrition from self-directed interventions: Investigating the relationship between psychological predictors, intervention content and dropout from a body dissatisfaction intervention. [Social Science & Medicine](#). 2010;71(1):30–37.
40. Coffey JK, Shahvali M, Kerstetter D, Aron A. Couples vacations and romantic passion and intimacy. [Annals of Tourism Research Empirical Insights](#). 2024;5(1).
41. Girme YU, Overall NC, Faingataa S. 'Date nights' take two: The maintenance function of shared relationship activities. [Personal Relationships](#). 2014;21(1):125–149.
42. WHO. Fatherhood and Health outcomes in Europe. 2007. Available from: [\[Website\]](#)