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Impact of Family-Oriented Maternity Support on Mothers' Confidence and Early Postpartum Emotional Distress

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ABSTRACT

Background: A mother's self-efficacy and postpartum blues have a significant influence on the mother's ability to adapt and the quality of care provided to the baby. Another word that exists in most of Indonesian health care, especially in urban areas like Batam, is the lack of addressing postpartum psychological problems in routine nursing care, which receives less attention. Family-Centered Maternity Care (FCMC) is a nurse-led, family-inclusive intervention to promote the mental health of mothers postpartum. **Objectives:** This research aims to determine the effectiveness of FCMC in increasing maternal self-efficacy and reducing postpartum blues among mothers who have given birth in Batam, Indonesia. **Methods:** A quasi-experimental pre-test post-test control group design was used to recruit 128 postpartum mothers (64 intervention, 64 control). The intervention was implemented through four structured FCMC sessions over two weeks, by maternal and child nurses, while the control group received routine care as usual. Maternal self-efficacy was assessed using the MEQ, whereas postpartum blues was assessed using the Postpartum Blues Questionnaire (PBQ). The Mann-Whitney U test, Wilcoxon signed-rank test, and Spearman's correlation were used for data analysis ($p<0.05$). **Results:** The intervention group had significantly higher post-intervention scores for maternal self-efficacy (mean= 69.72 ± 5.45) than the control group (mean= 38.25 ± 4.16; $p<0.001$), and lower postpartum blues scores (mean= 26.05 ± 3.66) than the control group (mean= 52.95 ± 4.13; $p<0.001$). Maternal self-efficacy and postpartum blues had a negative correlation (r =0.805, p <0.001). **Conclusion:** FCMC has been shown to increase maternal self-efficacy and reduce postpartum blues significantly, making it a worthy addition to standard postpartum nursing practice.

Keywords: Family-centred Maternity Care; Maternal-child Nursing; Maternal Self-efficacy; Postpartum Blues; Quasi-Experimental Study

INTRODUCTION

The first few weeks after a child is born are a sensitive period of development for women, as psychological and emotional adjustment plays a hand in physical recovery (Klassen & Klassen, 2018). Hence, a mother's self-efficacies in handling the baby's care demands as well as early mood variations can be seen as primary indicators of her well-being, which in turn will have implications for her bonding with her baby, attending to her baby's care demands, and adjusting to changes in her identity as a parent (Dlamini *et al.,* 2023). Postpartum care in many primary health facilities still emphasizes physical recovery, although psychological nursing care is also highly relevant. This does not systematically provide adequate resources to meet the emotional and mental health needs of mothers (WHO, 2022). In the crucial first weeks after delivery, mothers can experience emotional distress and a crisis of confidence. This is particularly true in urban areas where

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traditional family support patterns have changed, and the situation can worsen if there is a disruption in the continuity of access to health services (Matvienko-Sikar *et al.,* 2025). Therefore, an intervention approach that includes the family and emphasizes improving psychosocial conditions is crucial in supporting overall maternal health (Waqas *et al.,* 2022).

Postnatal care for mothers relies heavily on the state of psychological and emotional health they exhibit, with nursing strategies that integrate support for physical recovery and promotion of mental health required (Klassen & Klassen, 2018). Maternal self-efficacy and early emotional turbulence are major beacons responsive to nursing care recipients that have a great influence on maternal functioning, mother-infant attunement, breastfeeding outcomes, and early parenting (Sitvast & Springer, 2019). Higher emotional vulnerability, ineffective coping, and the risk of mood disorders in the early postpartum period are often found in mothers with low levels of self-confidence. Nurses are at the forefront of maternal/child health systems as primary care providers and play a critical role in supporting mothers' confidence and preventing women's mental health disorders with family-focused, empirically validated interventions (Ludman *et al.,* 2015).

Early postpartum emotional problems represent a major public health burden worldwide. They are reported to affect 40-80% of women in the first 2 weeks after delivery (Sukartini *et al.*, 2019). Physical health examinations still dominate postpartum care in Indonesia. At the same time, the integration of holistic assessments of maternal emotional and psychological well-being is not yet fully optimal (Hekkala & Nordbäck, 2024). This issue deserves attention, especially in urban-industrial areas, where economic burdens, shift work systems, and limited support from extended families can increase the risk of mental stress in mothers who are just entering the early stages of motherhood (Goodman & Israel, 2020). Without formalized, mental health–oriented nursing care, many postnatal women remain at increased risk of emotional instability and diminished maternal self-confidence.

In Indonesia, postpartum health services for mothers are still largely focused on physical aspects such as postoperative wound care, breastfeeding support, and infant health checks. Although these aspects are essential, there are still few well-systematized psychological education programs and structured family involvement plans. In fact, according to the findings of Hay and Blenkinsopp (2018), these two factors play a very important role in adjusting the mother's emotions and preventing the onset of mood disorders in the early postpartum period. The concept of FCMC has evolved into a more holistic model of maternity nursing care, in which the mother, her family, and medical professionals work collaboratively. FCMC emphasizes collective decision-making, compassionate support, family strengthening, and understanding cultural context in assisting mothers' postpartum transition (Tongpeth *et al.,* 2018). Studies in various countries show that FCMC implemented in primary care can improve maternal self-confidence and emotional health. However, in Indonesia, its consistent use and adequate evaluation remain very limited (Christie, 2015).

This research is grounded in two theoretical foundations: Mercer's theory, which examines the process of developing maternal identity, and Swanson's child-rearing theory. Mercer believes that how a mother adapts to her new role is largely determined by three factors: her level of self-confidence in her abilities, her competence in fulfilling the maternal role, and the quality of social support around her (Bagienski *et al.,* 2022). Swanson's caring model emphasizes that the following basic nursing acts, namely, knowing the patient, being with, doing for the person, and enabling power or providing a sense of control, as well as sustaining hope, are core dimensions of therapeutic nurse–patient relationships (Brändle & Kuckertz, 2023). FCMC shares principles with the aforementioned theories. This model aims to strengthen the mother's position in two ways: by integrating the family's role in the care process and by providing personal assistance from nursing staff (Ludman *et al.,* 2015).

While awareness of the importance of psychosocial aspects in postpartum maternal care has increased,

quasi-experimental evaluation studies examining FCMC in primary healthcare facilities in Indonesia remain limited. The available research has continued to focus largely on the physical health aspects of mothers, with little attention paid to emotional measures such as maternal confidence and early depressive symptoms (Hekkala & Nordbäck, 2024). This research gap underscores the need for more detailed intervention studies to examine the psychological impact of family engagement-based nursing approaches. This study, therefore, aimed to investigate the efficacy of family-oriented maternity support on maternal confidence and early postpartum emotional problems among recent mothers. These findings are expected to strengthen evidence-based nursing practice while facilitating the implementation of structured care models that involve families in existing postpartum protocols.

METHODOLOGY

Study Design

The method used in this study was a quasi-experimental study, with pre-and post-treatment measurements and a comparison group. This design aligns with guidelines for evaluating behavioral interventions in contexts where random assignment is not feasible to implement (Brower & Luebcke, 2024). Influential behavior change approach of FCMC.

Setting and Participants

The research was conducted at two government health centers in Batam, Indonesia. Authors recruited 128 postnatal mothers through consecutive sampling and randomly allocated 64 to the intervention group and 64 to the control group. Inclusion criteria were mothers at 3–7 days after giving birth, aged 18–45 years old, living with family members, and proficient in reading and speaking Bahasa Indonesia. This study did not include mothers with a history of serious mental illness, mothers with birth complications requiring intensive care, or mothers whose babies were treated in the Neonatal intensive care unit (NICU).

Group Allocation

This study used a non-randomized, location-based allocation method (to prevent contamination) to assign participants to either the intervention or the control treatment. One of the Puskesmas centers was the intervention center, and the other was the control center. Homogeneity of baseline demographic variables and outcome factors was assessed before the intervention to confirm group equivalence.

Intervention

Mothers in the intervention group received family-centered maternal care from experienced maternal and child nursing staff during 4 organized contacts over 14 days. The session contained (1) evaluation of postpartum physical domain and emotional condition, (2) educational instructions regarding the maternal role adjustment and newborn care practice, (3) training of family members to support and be involved in care practices, and (4) retraining regarding maternal stress management strategies with parenting reassurance. The family took part in every group.

For the control group, they still received conventional postpartum services from public health facilities, including physical health evaluations, lactation support, and observation of infant development.

The choice of a 14-day duration is based on the fact that postpartum emotional disorders generally peak in the first two weeks, while also considering the practicality of its implementation in the existing community nursing service system.

Intervention Fidelity

Uniform implementation of interventions is ensured by having standard operating procedures and checklists in each session. All nursing staff who provided the intervention underwent initial training and competency testing. Routine weekly supervision from senior maternal and child health nurses, accompanied by random documentation checks, aims to ensure the implementation of intervention protocols in accordance with applicable regulations. Implementation fidelity surpassed 95%.

Instruments

Mothers' self-confidence was measured using the Mothers' Effectiveness Questionnaire (MEQ) and assessed early postpartum emotional distress with the PBQ. The internal consistency of these two measurement instruments is very good, as reflected in the Cronbach's alpha value, which exceeds 0.95.

Classified MEQ scores as follows: inadequate (<40), moderate (40–59), strong (60–74), and superior (≥75). PBQ scores were categorized as follows: no symptoms (<30 points), mild expression (30–44 points), moderate presentation (45–59 points), and serious manifestation (≥60).

Data Collection Procedure

Baseline data was collected before the intervention (pre-test) and measured post-intervention at the end of the second week (post-test). Participants signed a written informed consent form prior to data collection; thereby, thay volunteered, and met the ethical considerations for research conducted in nursing and maternal health (Ma *et al*., 2022). Given that they were behavioual interventions, masking participants was not feasible. However, outcome assessors were independent of data collection; they did not deliver the intervention. They did not know how groups were allocated to prevent assessor bias.

Sample Size

Sample size was obtained using G*Power, with an effect size of 0.5, power of 0.80, and alpha level of 0.05, resulting in a minimum number of participants (n) necessary for the study of 102 individuals. In case of participant dropout, 128 participants are included in this study.

Data Analysis

Analyzed the data using SPSS version 26. Because the data are not normally distributed, the analysis uses nonparametric methods. The Wilcoxon signed-rank test was used for within-group changes, and the Mann–Whitney U test was used for between-group differences. Effect size (r) and 95% CI were included in all nonparametric analyses to facilitate interpretation of the results. Given the nonparametric nature of the data distribution (Gallegos *et al.,* 2018), Spearman's rank correlation was used to assess the relationship between maternal self-efficacy and emotional distress in the early period. A significance level of $\alpha = 0.05$ was applied for all statistical tests (Law *et al.,* 2018).

Ethical Considerations for Nursing Practice

The researchers obtained ethical clearance from the Health Research Ethics Committee of Universitas Batam, Riau Islands, Indonesia, with reference number 057/LPPM-UNIBA/PI-EC/VII/2024 on 30th July 2024.

This study adheres to ethical standards for medical research. Informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose, procedures, and data confidentiality, as well as their freedom to withdraw at any time without consequences.

RESULTS

Table 1: Demographic Characteristics and Nursing Assessment Parameters (n=128)

Characteristics	Nursing Intervention Group (n=64)	Standard Nursing Care Group (n=64)
Age (years)	**n (%)**	**n (%)**
20-25	18 (28.1)	21 (32.8)
26-30	30 (46.9)	29 (45.3)
31-35	16 (25.0)	14 (21.9)
Mean±SD	**28.33±3.883**	**27.20±3.072**
Education Level		
Elementary school	0 (0)	0 (0)
Junior High School	10 (15.6)	24 (37.5)
High school	32 (50.0)	23 (35.9)
College	22 (34.4)	17 (26.6)
Occupation		
Civil Servant	10 (15.6)	10 (15.6)
Entrepreneur	6 (9.4)	8 (12.5)
Housewife	26 (40.6)	24 (37.5)
Private Sector Employee	22 (34.4)	22 (34.4)
Parity		
Primipara	32 (50.0)	37 (57.8)
Multipara	32 (50.0)	27 (42.2)
Type of Childbirth		
Normal	38 (59.4)	38 (59.4)
Sectio Caesarea	26 (40.6)	26 (40.6)

Note: Baseline characteristics were analysed using Pearson's Chi-square or Fisher's exact test as appropriate. $p > 0.05$ indicates no statistically significant differences between groups

Demographic characteristics of participants by intervention and control conditions are detailed in Table 1. No significant differences were found in demographic characteristics (age, education, employment status, parity, delivery method) between the intervention and control groups. Statistical tests proved that both groups were equivalent at baseline ($p > 0.05$), indicating homogeneity before the intervention began.

Table 2: Maternal Self-Efficacy Scores (MEQ)- Within-Group Comparison

Group	Pre-test Mean ± SD	Post-test Mean ± SD	*p*-value
Intervention (n = 64)	44.23 ± 5.548	69.72 ± 5.458	<0.001
Control (n = 64)	38.39 ± 4.370	38.25 ± 4.163	>0.05

Note: Within-group differences were analysed using the Wilcoxon signed-rank test. $p < 0.05$ indicates statistically significant differences; $p > 0.05$ indicates no statistically significant differences.

Before and after the intervention period, maternal confidence scores are presented in Table 2 (within-group comparisons). From baseline to follow-up, maternal self-confidence increased significantly in the intervention group (p=0.05). This confirms the efficacy of a family-oriented prenatal care approach in increasing maternal self-efficacy.

Table 3: Maternal Self-Efficacy Scores (MEQ)- Between-Group Post-test Comparison

Variable	Intervention Mean	Control Mean	*p*-value	Effect Size (*r*)	95% CI
Maternal self-efficacy	69.72	38.25	<0.001**	0.78 (large)	29.77 to 33.17

Note: Between-group differences were analysed using the Mann–Whitney U test. Effect size (r) was calculated to determine the magnitude of the intervention effect. $p < 0.05$ indicates statistically significant differences.

Baseline confidence scores were significantly higher in intervention than in standard care mothers ($p < 0.001$; effect size large). The analysis shows that family-centered maternity care leads to a greater increase in maternal self-efficacy than usual postnatal care (Table 3).

Table 4: Postpartum Blues Scores (PBQ)- Within-Group Comparison

Group	Pre-test Mean ± SD	Post-test Mean ± SD	*p*-value
Intervention (n = 64)	52.72 ± 4.438	26.05 ± 3.658	<0.001
Control (n = 64)	53.66 ± 4.036	52.95 ± 4.131	>0.05

Note: Within-group differences were analysed using the Wilcoxon signed-rank test. $p<0.05$ indicates statistically significant differences; $p > 0.05$ indicates no statistically significant differences

Table 4 presents the within-group comparison of postpartum blues scores before and after the intervention. The intervention group experienced a significant reduction in postpartum blues scores from pre-test to post-test ($p < 0.001$). In contrast, no significant change was observed in the control group ($p > 0.05$). This finding suggests that family-centered maternity care contributed to reducing postpartum blues symptoms among postpartum mothers.

Table 5: Postpartum Blues Scores (PBQ)- Between-Group Post-test Comparison

Variable	Intervention Mean	Control Mean	*p*-value	Effect Size (r)	95% CI
Postpartum blues	26.05	52.95	<0.001**	0.81 (large)	–-28.27 to –25.53

Note: Between-group differences were analysed using the Mann–Whitney U test. Effect size (r) was calculated to determine the magnitude of the intervention effect. $p < 0.05$ indicates statistically significant differences.

Table 5 shows post-intervention comparisons of the early emotional difficulty scores across the study groups. Mothers in the intervention group reported significantly less distress than those in the standard care group ($p < 0.001$), with a moderate effect size. This indicates that family-based maternity stimulation was successful in attenuating the early postpartum emotional problems of new mothers.

Table 6: Nursing Assessment: Correlation Between Maternal Self-Efficacy and Postpartum Blues (n=128)

Time Point	rs	*p*-value
Pre-test	–0.806	<0.001**
Post-test	–0.805	<0.001**

*Note:(rs) represents Spearman's rank correlation coefficient; **$p < 0.001$ indicates high statistical significance*

Table 6 illustrates the relationship between maternal confidence and early emotional difficulties at baseline and follow-up. A significant inverse correlation was consistently identified across the observation period ($p < 0.001$), indicating that increased maternal self-efficacy was associated with decreased emotional distress. The persistence of this relationship suggests that efforts to strengthen mothers' self-confidence and parenting competence may effectively reduce the prevalence of postpartum emotional problems.

Table 7: Distribution of Maternal Self-Efficacy and Postpartum Blues Categories in the Intervention Group (Post-test, n=64)

Maternal Self-Efficacy Level	No Postpartum Blues, n (%)	Mild Postpartum Blues, n (%)	Total, n (%)
Very Good	7 (10.9)	34 (53.1)	41 (64.1)
Good	14 (21.9)	2 (3.1)	16 (25.0)
Moderate	0 (0.0)	7 (10.9)	7 (10.9)
Total	21 (32.8)	43 (67.2)	64 (100)

Note: Data are presented as frequency (n) and percentage (%). Categories of maternal self-efficacy were based on MEQ classification, and postpartum blues categories were based on PBQ classification.

Table 7 presents the distribution of maternal confidence and adversity levels among the intervention arm follow-up sample. Most mothers reached good or very good levels of maternal confidence after participating in the intervention. The majority reported no symptoms or only mild emotional problems, indicating good recovery of maternal psychological outcomes post receipt of family-based maternity support.

DISCUSSION

Family-centered maternity is now recognized as an effective intervention for postpartum maternal psychological well-being (Waqas *et al.,* 2022). This finding of increased maternal self-efficacy is consistent with previous literature on the effectiveness of nurse-led family-based interventions in strengthening maternal self-efficacy and postpartum adaptation. Active involvement of the nuclear family provides emotional validation, practical support, and shared responsibility for infant care, vital elements for enhancing maternal coping skills and parenting competence (Bartkowski *et al.,* 2024). These supportive environments allow the mother to face early postpartum challenges more successfully and to strengthen her confidence in, and the power of, caring for a baby (Zulkarnaini *et al.,* 2023).

The results of this theoretical aspect confirm the fundamental components of Mercer's Maternal Role Attainment Theory, which emphasize the significance of social support and maternal self-efficacy in adopting the maternal role (Mercer & Walker, 2006). Family involvement increases maternal support and efficacy, thereby improving role adaptation and well-being in the early postpartum period (Shorey *et al.,* 2014). Systematically designed programs such as FCMC, which integrate components of psychological education, emotional assistance, and targeted parenting practices, are highly relevant in supporting maternal role development (Shorey & Ng, 2019).

The reduction in early postpartum affective distress in the post-test group results provides further evidence in support of features of Swanson's Caring Theory, such as structuring presence, enabling help, and giving hope (Qomi *et al.,* 2023). The nurse's supportive and communicative attitude towards the mother, together with family participation, creates a therapeutic environment that facilitates the normalization of emotional responses and strengthens the mother's resilience. Empirical evidence from previous studies indicates that nurse-based interventions emphasizing emotional support can reduce psychological stress and improve maternal well-being in the postpartum phase (Kalani *et al.,* 2022).

FCMC implementation will have strategic relevance in regions undergoing urbanization-industrialization transition, as traditional postpartum support networks weaken. Socioeconomic stress, work demands, and reduced support from the extended family can increase maternal vulnerability to emotional problems. In this situation, a family involvement-based nursing approach can replace the lost traditional support role by strengthening family bonding and assisting in the mother's postpartum adaptation (Jung, 2018).

Unlike conventional postpartum care that focuses on physical aspects and infant care, FCMC provides a holistic approach that integrates emotional, relational, and educational dimensions (Aranburu-Imatz *et al.,* 2022). Evidence suggests optimal postpartum interventions are achieved when psychosocial support, family engagement, and culturally based education complement clinical services (Hadisuyatmana *et al.,* 2021). The findings underscore the importance of a family-based approach to addressing the psychological aspects of postpartum that are often overlooked in standard care.

While the results are promising, there are limitations to consider. The quasi-experimental design limited control of confounding factors, although the baseline characteristics of the groups were similar (Yao *et al.,* 2023). The use of self-reported instruments may lead to response bias. In addition, the duration of follow-up was up to 2 weeks, allowing identification of immediate results but not maternal psychological adaptation in a longer period (Althubaiti, 2016). Future research must have methodological rigor, including randomized controlled trials and longer follow-up, and contribute to mixed-methods research designs to improve the sustained effects of FCMC and the experience of mothers and families (Fetters & Molina-Azorin, 2020).

Comprehensively, these results confirm the urgency of incorporating a structured family-based nursing model into the postpartum care system (Nayeri *et al.,* 2020). The elements of family support, emotional support, and maternal education in FCMC contribute to improving maternal health and the quality of care services (Kim

et al., 2020). Implementing this approach can maintain maternal psychological well-being and encourage integrated care in MCH services (Yatabe *et al.,* 2021).

The study's findings demonstrate the significance of integrating FCMC into routine postpartum care to improve maternal psychological well-being. Nurses play an essential role in providing structured emotional support, strengthening maternal self-efficacy, and engaging families in the early postpartum period (Shorey & Ng, 2019). Practically, maternal and child health nurses require expertise in therapeutic communication, psychosocial assessment, and family involvement to implement FCMC in daily practice. Incorporating interventions that involve families in postpartum care is effective in improving maternal adaptation and emotional stability (Waqas *et al.,* 2022).

From an educational perspective, FCMC principles should be incorporated into nursing curricula and ongoing training to support optimal maternal care (Pezley *et al.,* 2022). Training should focus on communication skills, culturally informed care, and family engagement to support mothers. From a policy perspective, clear clinical guidelines and standardized protocols are needed for consistent implementation of family-based postpartum care in all health facilities. The availability of psychosocial support for mothers after childbirth can be improved through a combination of conducive organizational policies and community-based collaboration, as suggested by Dimidjian *et al.*(2016). Researchers identified the need for additional research focused on the sustainability of outcomes and on the development of family-centered care approaches across diverse healthcare settings.

Limitations

Several limitations to this study should be considered in interpreting the results. First, the quasi-randomized design does not allow for full confounding control. However, the groups are similar with respect to all baseline characteristics. RCTs will still be required in future research to strengthen causal inference. Second, the use of self-reported measures to assess maternal confidence and early emotional problems in mothers may lead to response and social desirability bias, despite anonymity and masked outcome assessors. Third, the duration of follow-up was limited to 2 weeks, which is considered the time of highest risk for early postpartum mood disturbance. The chosen study period is suitable for monitoring immediate changes. However, it is not yet able to describe the intervention's effectiveness on a sustainable basis in the future. Another limitation lies in the research setting, which is in an urban zone with an industrial base. The location coverage is limited to two community health centers. Hence, the conclusions of this study are not necessarily relevant to rural contexts or communities with cultural diversity in various provinces in Indonesia.

CONCLUSION

Family-centered care-based nursing strategies in the context of childbirth have been shown to increase maternal self-efficacy and reduce psychological distress in the early postpartum phase. Collaboration between planned psychological educational interventions, emotional support, and family involvement is a fundamental element in encouraging the adjustment of the mother's psychosocial condition during the early postpartum recovery period. Implementing a family-based care approach as a standard norm in postpartum nursing interventions can improve maternal well-being outcomes and maternal-child service excellence, particularly in urban settings with inadequate informal support systems. Consistency in implementing a family-oriented postpartum care model can be achieved through strategies to develop nurse professionalism and reinforce institutional policies. Future studies should be designed to examine the long-term consequences for mothers and to evaluate the performance of FCMC across population groups and diverse health care settings.

Recommendations

For the practice of nursing, it incorporating FCMC into routine postpartum care in primary healthcare

centers. The realization of this depends on the provision of professional education, the implementation of pilot projects, and routine supervision of maternal-child health nurses to ensure accurate service delivery in compliance with established standard procedures. Regulatory authorities have the option to incorporate this evidence-based, family-focused model into national maternal care standards and guidelines to support early detection and treatment of mental health problems. At the local community level, collaboration with family support services and digital health infrastructure expands the reach of family-centered care models. Implementing these recommendations can result in a more comprehensive and culturally sensitive postpartum care system, as well as being more optimal in responding to maternal mental health challenges.

Conflict of Interest

The authors declare that they have no competing interests.

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REFERENCES

Althubaiti, A. (2016). Information bias in health research: definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare, 9*, 211–217. https://doi.org/http://10.2147/JMDH.S104807

Aranburu-Imatz, A., López-Carrasco, J., de la C., Moreno-Luque, A., Jiménez-Pastor, J. M., Valverde-León, M. D. R., Rodríguez-Cortés, F. J., Arévalo-Buitrago, P., López-Soto, P. J., & Morales-Cané, I. (2022). Nurse-led interventions in chronic obstructive pulmonary disease patients: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health, 19*(15), 9101. https://doi.org/10.3390/ijerph19159101

Bagienski, S. E., Kuhn, G., Goddard, L. & de Almeida, S. e S. B. (2022). Mastering the Impossible: Piloting an easier-than-expected magic intervention that acts as a source of self-efficacy. *Psychology of Consciousness Theory Research and Practice, 9*(3), 243–256. https://doi.org/10.1037/cns0000332

Bartkowski, J. P., Klee, K., Xu, X., Roach, J. B., & Jones, S. (2024). It takes a village: How community-based peer support for breastfeeding bolsters lactation prevalence among black Mississippians on the Gulf Coast. *Pediatric Reports, 16*(4), 1064–1076. https://doi.org/10.3390/pediatric16040091

Brändle, L., & Kuckertz, A. (2023). Inequality and entrepreneurial agency: How social class origins affect entrepreneurial self-efficacy. *Business & Society, 62*(8), 1586–1636. https://doi.org/10.1177/0007 6503231158603

Brower, J., & Luebcke, C. (2024). Enhancing nurse practitioner student knowledge base and self-efficacy in the care of acutely Ill obstetric patients. *Nurse Educator, 50*(2), E126–E127. https://doi.org/10.1097/nne. 0000000000001735

Christie, W. J. (2015). Perceptions of managerial support after workplace violence. *Nursing Management, 22*(7), 32–36. https://doi.org/10.7748/nm.22.7.32.s28

Dimidjian, S., Goodman, S. H., Felder, J. N., Gallop, R., Brown, A. P., & Beck, A. (2016). Staying well during pregnancy and the postpartum: A pilot randomized trial of mindfulness-based cognitive therapy for the

prevention of depressive relapse/recurrence. *Journal of Consulting and Clinical Psychology, 84*(2), 134–145. https://doi.org/10.1037/ccp0000068

Dlamini, L. P., Hsu, Y. F., Shongwe, M. C., Wang, S., & Gau, M. (2023). Maternal self-efficacy as a mediator in the relationship between postpartum depression and maternal role competence: A cross-sectional survey. *Journal of Midwifery & Women's Health, 68*(4), 499–506. https://doi.org/https://10.1111/jmwh.13478

Fetters, M. D., & Molina-Azorin, J. F. (2020). Utilizing a mixed methods approach for conducting interventional evaluations. *Journal of Mixed Methods Research, 14*(2), 131–144. https://doi.org/10.1177/1558689820912856

Gallegos, D., Cromack, C., & Thorpe, K. (2018). Can a phone call make a difference? Breastfeeding self-efficacy and nurse responses to mother's calls for help. *Journal of Child Health Care, 22*(3), 433–446. https://doi.org/10.1177/1367493518757066

Goodman, J. A., & Israel, T. (2020). An online intervention to promote predictors of supportive parenting for sexual minority youth. *Journal of Family Psychology, 34*(1), 90–100. https://doi.org/10.1037/fam0000614

Hadisuyatmana, S., Has, E. M. M., Sebayang, S. K., Efendi, F., Astutik, E., Kuswanto, H., & Arizona, I. (2021). Women's empowerment and determinants of early initiation of breastfeeding: A scoping review. *Journal of Pediatric Nursing, 56*, e77–e92. https://doi.org/10.1016/j.pedn.2020.08.004

Hay, A., & Blenkinsopp, J. (2018). Anxiety and human resource development: Possibilities for cultivating negative capability. *Human Resource Development Quarterly, 30*(2), 133–153. https://doi.org/10.1002/hrdq.21332

Hekkala, R., & Nordbäck, E. (2024). Unpacking reflexivity, psychological empowerment, and agile project dynamics among information systems professionals. *Information Systems Journal, 35*(4), 1101–1131. https://doi.org/10.1111/isj.12569

Jung, M. (2018). The effect of maternal decisional authority on children's vaccination in East Asia. *PLoS ONE, 13*(7), e0200333. https://doi.org/10.1371/journal.pone.0200333

Kalani, Z., Ebrahimi, S., & Fallahzadeh, H. (2022). Effects of the liaison nurse management on the infectious stroke complications: A randomized controlled trial. *BMC Nursing, 21*(1), 29. https://doi.org/10.1186/s12912-021-00802-0

Kim, Y., Kim, H.-Y., & Cho, E. (2020). Association between the bed-to-nurse ratio and 30-day post-discharge mortality in patients undergoing surgery: A cross-sectional analysis using Korean administrative data. *BMC Nursing, 19*(1), 17. https://doi.org/10.1186/s12912-020-0410-7

Klassen, R. M., & Klassen, J. (2018). Self-Efficacy Beliefs of medical students: Critical review. *Perspectives on Medical Education, 7*(2), 76–82. https://doi.org/10.1007/s40037-018-0411-3

Law, K. H., Dimmock, J. A., Guelfi, K. J., Nguyen, T., Gucciardi, D. F., & Jackson, B. (2018). Stress, depressive symptoms, and maternal self-efficacy in first-time mothers: Modelling and predicting change across the first six months of motherhood. *Applied Psychology Health and Well-Being, 11*(1), 126–147. https://doi.org/https://10.1111/aphw.12147

Ludman, E., McCorkle, R., Bowles, E. J. A., Rutter, C. M., Chubak, J., Tuzzio, L., Jones, S. M. W., Reid, R. J., Penfold, R. B., & Wagner, E. H. (2015). Do depressed newly diagnosed cancer patients differentially benefit from nurse navigation? *General Hospital Psychiatry, 37(*3), 236–239. https://doi.org/10.1016/j.genhosppsych.2015.02.008

Ma, J., Wang, A., & Zhou, H. (2022). Impact of the COVID-19 lockdown on quality of life in pregnant women. *Frontiers in Public Health, 10,* 785383. https://doi.org/10.3389/fpubh.2022.785383

Matvienko-Sikar, K., van Dijk, W., Dockray, S., & Leahy-Warren, P. (2025). Modifiable and vulnerability factors

for maternal stress and anxiety in the first 1000 days: An umbrella review and framework. *Women and Birth, 38*(4), 101941. https://doi.org/https://doi.org/10.1016/j.wombi.2025.101941

Mercer, R. T., & Walker, L. O. (2006). A review of nursing interventions to foster becoming a mother. *Journal of Obstetric, Gynecologic, and Neonatal Nursing : JOGNN, 35*(5), 568–582. https://doi.org/10.1111/j.1552-6909.2006.00080.x

Nayeri, N. D., Samadi, N., Larijani, B., & Sayadi, L. (2020). Effect of nurse-led care on quality of care and level of HbA1C in patients with diabetic foot ulcer: A randomized clinical trial. *Wound Repair and Regeneration, 28*(3), 338–346. https://doi.org/10.1111/wrr.12788

Pezley, L., Cares, K., Duffecy, J., Koenig, M. D., Maki, P. M., Odoms-Young, A., Withington, M. H. C., Oliveira, M. L., Loiacono, B., Prough, J., Tussing-Humphreys, L., & Buscemi, J. (2022). Efficacy of behavioral interventions to improve maternal mental health and breastfeeding outcomes: A systematic review. *International Breastfeeding Journal, 17*(1), 67. https://doi.org/10.1186/s13006-022-00501-9

Qomi, M., Rakhshan, M., Monfared, M. E., & Khademian, Z. (2023). The effect of distance nurse-led fatigue management on fatigue, sleep quality, and self-efficacy in patients with multiple sclerosis: A quasi-experimental study. *BMC Neurology, 23*(1), 71. https://doi.org/10.1186/s12883-023-03115-8

Shorey, S., Chan, S. W.-C., Chong, Y. S., & He, H.-G. (2014). Maternal parental self-efficacy in newborn care and social support needs in Singapore: A correlational study. *Journal of Clinical Nursing, 23*(15–16), 2272–2282. https://doi.org/10.1111/jocn.12507

Shorey, S., & Ng, E. D. (2019). Evaluation of mothers' perceptions of a technology-based supportive educational parenting program (Part 2): Qualitative study. *Journal of Medical Internet Research, 21*(2), e11065. https://doi.org/10.2196/11065

Sitvast, J., & Springer, W. C. (2019). The use of photography in perceiving a sense in life: A phenomenological and existential approach in mental health care. *Nursing Philosophy, 21*(2), e12287. https://doi.org/10.1111/nup.12287

Tongpeth, J., Du, H., & Clark, R. (2018). An avatar-based education application to improve patients' knowledge of and response to heart attack symptoms: A pragmatic randomized controlled trial protocol. *Journal of Advanced Nursing, 74*(11), 2658–2666. https://doi.org/10.1111/jan.13767

Waqas, A., Zafar, S. W., Meraj, H., Tariq, M., Naveed, S., Fatima, B., Chowdhary, N., Dua, T., & Rahman, A. (2022). Prevention of common mental disorders among women in the perinatal period: A critical mixed-methods review and meta-analysis. *Cambridge Prisms Global Mental Health, 9*, 157–172. https://doi.org/10.1017/gmh.2022.17

World Health Organization. (2022). *WHO recommendations on maternal and newborn care for a positive postnatal experience*. https://iris.who.int/server/api/core/bitstreams/73dec697-c033-449c-8323-1cd04a8d8f20/content

Yao, M., Wang, Y., Busse, J. W., Briel, M., Mei, F., Li, G., Zou, K., Li, L., & Sun, X. (2023). Evaluating the impact of including non-randomised studies of interventions in meta-analysis of randomised controlled trials: A protocol for a meta-epidemiological study. *BMJ Open, 13*(7), e073232. https://doi.org/10.1136/bmjopen-2023-073232

Yatabe, J., Yatabe, M., Okada, R., & Ichihara, A. (2021). Efficacy of telemedicine in hypertension care through home blood pressure monitoring and videoconferencing: Randomized controlled trial. *JMIR Cardio, 5*(2), e27347. https://doi.org/10.2196/27347

Zulkarnaini, Z., Hernita, H., & Ardilla, A. (2023). The relationship between breastfeeding self-efficacy and the success of exclusive breastfeeding. *JIKO (Jurnal Ilmiah Keperawatan Orthopedi), 7*(1), 1–7. https://doi.org/10.46749/jiko.v7i1.121