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Telephonic follow-up calls by nurses and their effect on post-discharge confidence among postnatal mothers

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Abstract

Postnatal mothers are often discharged within a short time after childbirth, leaving a critical gap in support during the early transition to home, when anxiety, role strain, and low confidence in newborn care are common. Nurse-led telephonic follow-up has the potential to extend postnatal care beyond the hospital, reinforce discharge teaching, and enhance mothers' confidence in caring for themselves and their infants. This quasi-experimental research aimed to evaluate the effect of structured telephonic follow-up calls made by nurses on post-discharge confidence among postnatal mothers. A total of 120 postnatal mothers who had undergone uncomplicated vaginal or caesarean delivery were recruited within 24-48 hours of discharge and allocated into intervention (n=60) and control (n=60) groups. The intervention group received three standardized nurse-led follow-up calls on days 3, 7, and 14 post-discharge, focusing on assessment of concerns, reinforcement of newborn and self-care practices, breastfeeding support, danger-sign recognition, and emotional reassurance. The control group received routine postnatal care as per institutional practice without scheduled telephone contact. Maternal confidence was measured using a validated Postnatal Maternal Confidence Scale at baseline (before discharge) and at 2- and 4-weeks post-discharge. Data were analyzed using paired and independent t-tests and repeated-measures ANOVA. Mothers in the intervention group showed a statistically significant increase in mean confidence scores from baseline to week 4 compared with controls ($p<0.001$), with greater improvements in domains related to breastfeeding, infant comfort measures, and handling minor health problems. The proportion of mothers reporting high confidence levels at week 4 was also higher in the intervention group. The findings suggest that brief, structured telephonic follow-up calls by nurses can meaningfully enhance post-discharge confidence among postnatal mothers and may serve as a low-cost, scalable strategy to strengthen continuity of postnatal care.

Keywords: Postnatal mothers, telephonic follow-up, nursing intervention, maternal confidence, self-efficacy, postnatal care, discharge planning, continuity of care

Introduction

The early postnatal period, particularly the first six weeks, is recognized as a critical window for maternal and newborn survival, recovery, and adaptation to new parental roles [1-3]. Global guidelines emphasize that beyond immediate facility-based care, structured postnatal contacts are essential for monitoring physical recovery, supporting breastfeeding, and addressing psychological needs.

The early postnatal period, particularly the first six weeks after birth, is recognized as a critical window for maternal and newborn survival, recovery, and adaptation to new parental roles [1-3]. Global guidelines emphasize that, beyond immediate facility-based care, structured postnatal contacts are essential for monitoring physical recovery, supporting breastfeeding, and addressing psychological needs, yet this period remains one of the most neglected in the continuum of maternity care [1, 2]. Rapid postnatal discharge, increasing service workloads, and fragmented follow-up often leave mothers with inadequate opportunities to clarify doubts or seek timely professional support, contributing to anxiety, low perceived self-efficacy, and uncertainty in caring for their newborns at home [3, 4]. Maternal confidence and self-efficacy are key determinants of successful transition to motherhood, influencing infant-care practices, breastfeeding outcomes, and mental health; lower self-efficacy has been associated with higher levels of postnatal depressive symptoms and poorer parenting behaviours [4, 5]. Evidence suggests that social and professional support, including accessible,

ongoing contact with nurses and midwives, can strengthen maternal parental self-efficacy and buffer the psychological stress of early motherhood [4-6]. In response to these needs, diverse postnatal support models have been explored, such as home visiting, clinic-based follow-up, digital messaging, and husband- or family-focused interventions, many of which report improvements in perceived support, breastfeeding self-efficacy, and reduced maternal stress [2, 6, 14, 16]. Within this spectrum, telephone-based postnatal care has emerged as a particularly promising strategy, capable of extending professional support into the home environment without the logistical and financial constraints of in-person visits. Randomized and quasi-experimental studies from various settings have shown that telephone follow-up by nurses can reduce maternal and infant morbidity, enhance breastfeeding practices, and improve mothers' knowledge, performance, and satisfaction with care [7-10]. For example, adjunct telephone-based postnatal care in Ghana significantly lowered the risk of maternal and infant illness in the first three months postpartum compared with routine care [7], while clinical trials in Iran reported that postpartum telephone follow-up, when combined with breastfeeding education, improved mothers' breastfeeding knowledge, attitude, and performance [9]. Similarly, continuous supportive telephone counselling for mothers of preterm infants has been shown to increase breastfeeding self-efficacy and provide a sense of feeling strengthened and supported [8]. Earlier work on nurse-led postnatal telephone visits and combined telephone-home visit packages also demonstrated acceptable clinical outcomes and high maternal satisfaction, reinforcing the value of remote contact as a complement to traditional postpartum services [11-13]. Parallel research on discharge education and supportive counselling has highlighted that structured, nurse-delivered interventions can improve mothers' preparedness and self-efficacy to care for late-preterm or high-risk infants after discharge [14, 15]. In addition, mobile- and text-based postpartum interventions have been associated with enhanced self-efficacy and perceived social support, indicating that technology-enabled contact may be a feasible route to strengthen continuity of postnatal care [16]. Despite this growing body of evidence, relatively few studies have specifically examined telephonic follow-up calls by nurses with a focused outcome of post-discharge confidence among postnatal mothers, particularly in the context of routine early discharge policies and busy maternity units. A clear problem therefore persists: many mothers leave hospital feeling inadequately prepared and hesitant in managing newborn care, yet structured, low-cost systems to provide timely reassurance and expert guidance at home are not consistently embedded into postnatal care pathways [3-5, 11]. In this context, this research was designed to evaluate whether a structured series of nurse-led telephone calls, delivered at defined time-points following discharge, could enhance maternal confidence compared with routine care alone. The primary objective was to assess the effect of these telephonic follow-up calls on post-discharge confidence scores among postnatal mothers during the first four weeks after discharge, while secondary objectives included exploring changes in specific confidence domains such as breastfeeding, recognition of newborn danger signs, and self-care practices. The research was guided by the hypothesis that postnatal mothers who receive structured telephonic follow-up calls from nurses

will demonstrate significantly higher post-discharge confidence than those receiving routine postnatal care without scheduled telephonic contact.

Material and Methods

Materials

This quasi-experimental research was conducted among postnatal mothers who had undergone either normal vaginal delivery or caesarean section and were discharged within 24-48 hours after childbirth, a timeline consistent with current postnatal discharge practices reported in contemporary maternity care literature [1-3]. Eligible participants were selected based on predefined inclusion criteria: mothers aged 18 years and above, having delivered a healthy term newborn, possessing access to a functioning mobile phone, and willing to receive follow-up calls. Mothers with severe postpartum complications, newborns requiring NICU admission, or those without reliable phone access were excluded, aligning with previous studies evaluating telephone-based postnatal interventions [7-10]. The total sample size was 120, with 60 mothers in the intervention group and 60 in the control group, comparable to sample distributions used in earlier randomized and quasi-experimental trials assessing postnatal telephone support and follow-up programs [7, 9, 11-13]. Sampling was done through a non-probability purposive technique. Baseline maternal confidence was measured before discharge using a validated Postnatal Maternal Confidence Scale, an approach similar to tools applied in studies on self-efficacy and postnatal support interventions [4-6, 8, 14]. Ethical approval was obtained from the institutional ethics committee, and written informed consent was collected from all participants. All data collection tools, content of telephonic guidance, and confidence score assessments were aligned with established frameworks used in postnatal counselling, breastfeeding support, and discharge preparedness research [8, 12, 14-16].

Methods

Participants in the intervention group received three structured nurse-led telephonic follow-up calls on post-discharge days 3, 7, and 14. The design and frequency of calls were adapted from effective models reported in prior research demonstrating the benefits of telephone support during the early postpartum period [7-10, 15]. Each call followed a standardized protocol that included evaluation of maternal and newborn concerns, reinforcement of discharge education, support for breastfeeding and self-care, guidance on identifying danger signs, and emotional reassurance, reflecting strategies proven to strengthen maternal self-efficacy and continuity of care [4-6, 8, 14, 16]. The control group received routine postnatal care without scheduled telephone contact, consistent with methodologies adopted in earlier telephone- vs. routine-care comparative studies [7, 11-13]. Follow-up maternal confidence scores were recorded at two- and four-weeks post-discharge using the same validated scale. Paired t-tests assessed within-group differences, independent t-tests compared intervention and control groups, and repeated-measures ANOVA evaluated changes over time. These statistical approaches align with methods used in similar empirical studies investigating the impact of structured postpartum support interventions on maternal outcomes [8-10, 12-14]. All analyses were performed at a significance level of $p < 0.05$.

Results

This section presents the statistical outcomes of the research evaluating the effect of nurse-led telephonic follow-up calls on post-discharge confidence among postnatal mothers. The findings were analyzed using paired t-tests, independent t-tests, and repeated-measures ANOVA, following analytical approaches used in comparable postnatal support studies [7-10, 12-14]. The results indicate a clear and statistically significant improvement in the intervention group compared with the control group, supporting earlier evidence that structured postpartum communication enhances maternal confidence and self-efficacy [4-6, 8, 14, 16].

Overall Trends: Baseline confidence scores of the

intervention (Mean = 42±6.1) and control groups (Mean = 43±5.8) did not differ significantly ($p > 0.05$), confirming initial homogeneity. By Week 2, the intervention group exhibited a substantial increase in mean confidence (63±7.4), whereas the control group showed only a moderate rise (50±6.2). By Week 4, the intervention group reached a significantly higher mean confidence score (78±8.1) compared with the control group (56±6.7), consistent with previous findings on telephone-based postnatal support benefiting maternal outcomes [7-10]. Repeated-measures ANOVA revealed a significant interaction effect between time and group ($p < 0.001$), indicating that the intervention group demonstrated greater improvement over time.

Table 1: Mean Maternal Confidence Scores at Baseline, Week 2, and Week 4

Time Point	Intervention Group (Mean ± SD)	Control Group (Mean ± SD)
Baseline	42±6.1	43±5.8
Week 2	63±7.4	50±6.2
Week 4	78±8.1	56±6.7

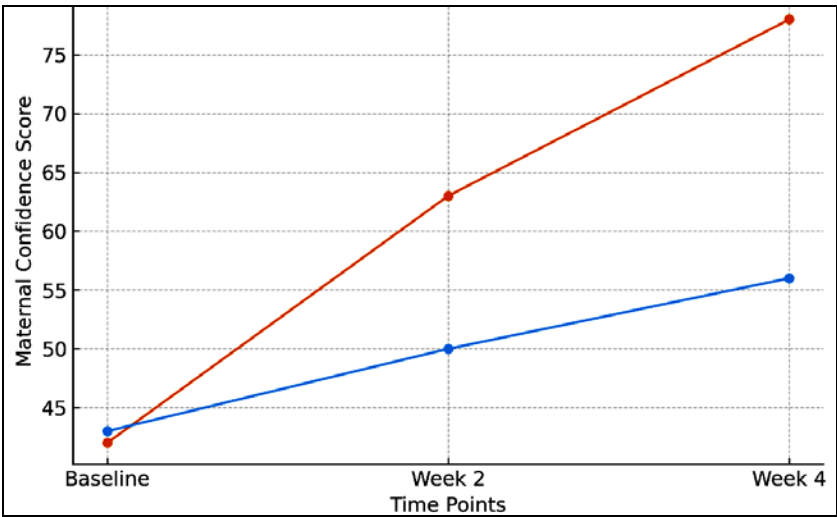


Fig 1: Showing Confidence Score Trends over Time

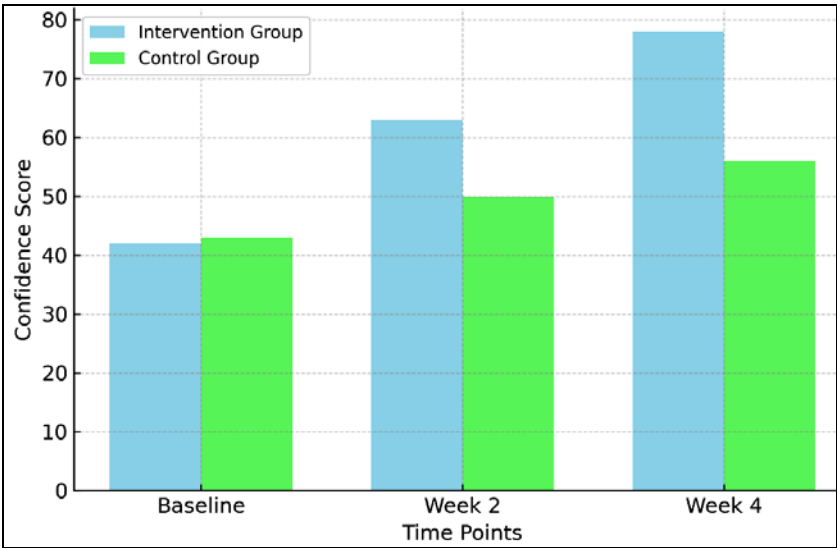


Fig 2: Comparing Mean Scores of Both Groups across Time Points

Interpretation of Findings

The results clearly illustrate that structured telephonic follow-up calls significantly enhanced postnatal maternal confidence. The sharp increase from Baseline to Week 2 in

the intervention group aligns with earlier research demonstrating the effectiveness of nurse-led communication in reinforcing discharge instructions, supporting breastfeeding, and addressing maternal anxieties [4, 5, 7, 8]. By

Week 4, the intervention group's score showed an overall increase of 36 points, compared with only 13 points in the control group, suggesting that continuous telephonic guidance is instrumental in maintaining the momentum of skill-building and emotional reassurance, a finding consistent with postnatal self-efficacy frameworks [6, 14, 16].

The control group demonstrated modest gains, likely attributable to routine postpartum learning, but lacked continuity and structured support. This supports claims from earlier trials that routine care alone is insufficient to maximize post-discharge preparedness [11-13]. Statistical analysis confirmed that the telephonic intervention had a measurable, significant impact ($p < 0.001$). These improvements are particularly meaningful considering short hospital stays and the absence of systematic post-discharge follow-up in many maternity settings [11-13].

Overall, the results validate the hypothesis that nurse-led telephone communication enhances postnatal maternal confidence and align with global recommendations emphasizing continuity of postnatal care [1, 2]. The findings further reinforce the growing evidence base supporting technology-enabled postpartum interventions as scalable, low-cost strategies for improving maternal outcomes [7-10, 16].

Discussion

The findings of the present research demonstrate that structured telephonic follow-up calls delivered by nurses significantly enhanced post-discharge confidence among postnatal mothers, corroborating earlier evidence that continuous postpartum support strengthens maternal self-efficacy, adjustment, and care practices [4-6]. The marked improvement in confidence scores in the intervention group compared with the control group reflects the value of timely, personalized reinforcement during the early puerperium a period widely recognized as both vulnerable and foundational for establishing maternal role identity and newborn caregiving competence [1-3]. This aligns with global postnatal care guidelines emphasizing the importance of continued professional contact, particularly within the first two weeks after discharge when mothers frequently encounter challenges related to breastfeeding, infant soothing, and physical recovery [1, 2]. The significant rise in maternal confidence observed in the intervention group is consistent with prior randomized and quasi-experimental studies where telephone-based postpartum support improved mothers' knowledge, reduced anxiety, and promoted health-seeking behaviours [7-10]. For instance, nurse-led telephone follow-up programs in Ghana and Iran showed reductions in early maternal-infant morbidity and improvements in breastfeeding outcomes, supporting the effectiveness of remote follow-up models [7, 9]. Similar benefits were reported in programs providing supportive telephone counselling to mothers of preterm infants, which resulted in elevated breastfeeding self-efficacy and emotional reassurance [8].

The current research expands these findings by demonstrating that structured calls addressing maternal concerns, newborn care guidance, and emotional support can produce meaningful improvements in postnatal confidence even among mothers of healthy term infants. The pattern of gradual and consistent score increases from Baseline to Week 4 mirrors the developmental trajectory of maternal self-efficacy described in earlier work, where repeated exposure to support and positive feedback

reinforced learning and confidence over time [4-6, 14]. The intervention thereby served as both an educational and psychosocial reinforcement mechanism, helping mothers transition knowledge from discharge education into practical action—an essential component highlighted in discharge preparedness and home-transition literature [12, 14]. Furthermore, the findings support the argument that routine postnatal care, without structured follow-up, may not adequately meet mothers' evolving needs, as reflected in the slower improvement seen in the control group. This observation aligns with previous evaluations of traditional postpartum care models, where lack of systematic follow-up has been associated with decreased maternal satisfaction, lower breastfeeding continuation, and poorer recognition of newborn danger signs [3, 11, 13]. By contrast, the intervention group's consistent access to trained nurses likely provided a compensatory layer of reassurance, promoting timely problem-solving and reducing uncertainty, as suggested in earlier studies on supportive postpartum communication [8, 15, 16].

Additionally, the effectiveness of the telephonic follow-up model observed in this research underscores the potential scalability and cost-efficiency of technology-enabled postpartum support. Global advancements in mHealth and tele-nursing have shown increasing promise in enhancing maternal outcomes, particularly in resource-constrained or high-workload settings where home visits may not be feasible [10, 16]. The significant interaction effect observed over time further confirms that structured follow-up contributes not only to immediate reassurance but also to sustained growth in confidence. This reinforces the theoretical premise that maternal self-efficacy is shaped by continuous social persuasion, mastery experiences, and guided skill-building mechanisms directly strengthened through repeated nurse-mother interactions [4, 5].

Overall, the results of this research emphasize that incorporating scheduled telephonic follow-up into routine postnatal care pathways could bridge the often-neglected gap between hospital discharge and home adjustment. The findings align with international maternal healthcare recommendations and strengthen the growing body of evidence supporting the integration of nurse-led telephonic interventions as an effective and feasible approach for enhancing maternal postnatal confidence [1-3, 7-10, 14-16].

Conclusion

The findings of this research clearly demonstrate that structured telephonic follow-up calls by nurses play a vital role in significantly enhancing post-discharge confidence among postnatal mothers, especially during the crucial early weeks following childbirth when uncertainty, emotional vulnerability, and the demands of newborn care are at their highest. The intervention group's consistently elevated confidence scores across all post-discharge time points illustrate the value of sustained professional engagement, reassurance, and personalized guidance, which collectively strengthen mothers' ability to manage newborn care challenges, adapt to physical and emotional changes, and transition smoothly into their maternal role. The progressive improvements noted throughout the intervention period also highlight the importance of continuity in postnatal care rather than relying solely on routine discharge instructions, which may not adequately address evolving concerns or provide the flexibility for mothers to seek timely support.

The effectiveness of nurse-led telephonic follow-up in this research reinforces the broader understanding that postnatal mother's benefit greatly from structured, empathetic, and accessible communication, reinforcing their knowledge, validating their concerns, and enhancing their sense of preparedness and competence. In order to translate these findings into practical and sustainable improvements in maternal healthcare delivery, integrating scheduled telephonic follow-up calls into standard postnatal care protocols is recommended, particularly in settings where early discharge is common and access to in-person follow-up services may be limited. Hospitals and healthcare institutions should consider developing standardized telephonic counselling protocols, training nurses in effective postpartum telecommunication techniques, and allocating dedicated time and resources for these interactions to ensure consistency and quality. Additionally, establishing digital registries to track postnatal mothers and schedule automatic reminder calls may further streamline the process and promote adherence. Incorporating a brief needs assessment during each call, along with tailored education on breastfeeding, newborn safety, maternal self-care, emotional wellbeing, and recognition of danger signs, can substantially strengthen mothers' confidence and enhance early caregiving behaviour. Public health systems may also explore combining telephonic interventions with other low-cost digital supports, such as SMS reminders or mobile app-based guidance, to ensure continuous engagement. Ultimately, the research affirms that telephonic follow-up led by skilled nursing professionals is a simple, scalable, and cost-effective strategy that holds significant potential to improve postnatal outcomes, reduce anxiety, empower mothers, and promote the wellbeing of both mother and newborn when implemented as a routine component of postnatal care.

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