**EtD 59. Should additional education around the nutrition and/or care of their preterm infants throughout their NICU stay be delivered through different methods (face-to-face, written, online) vs. standard care be used for families of preterm infants?**

| | |
|---|---|
| **POPULATION:** | Preterm infants and their parents |
| **INTERVENTION:** | Additional education delivered through different methods (face-to-face, written, online) |
| **COMPARISON:** | Standard care |
| **MAIN OUTCOMES:** | **Critical outcomes**<br>-Whānau preferences for sources of information around the nutrition and/or care of their preterm infants throughout their NICU stay<br>-Whānau decision-making experiences<br>-Whānau wellbeing, as defined by authors<br>-Parental understanding of information received: self-reported and measured<br>-Other lived experiences of receiving information throughout their infants' NICU journey<br><br>**Important but not critical**<br>Fully breastfed or breastmilk feeding at hospital discharge<br>Mortality<br>Neurodevelopmental impairment<br>Adverse effects<br>Time to reach full enteral feeds<br>Duration of initial hospital stay<br>Necrotising enterocolitis<br>Faltering growth/body composition<br>Sepsis<br>Bronchopulmonary dysplasia<br>Retinopathy of prematurity<br>**Less important for decision making**<br>Anaemia of prematurity<br>Cost: cost of intervention, cost of neonatal care and life-long cost |
| **SETTING:** | Neonatal care |
| **PERSPECTIVE:** | Patient/parent perspective |
| **BACKGROUND:** | The neonatal intensive care unit (NICU) is a challenging environment for parents, especially those with preterm infants. Infants' parents and wider support system (whānau) often struggle with stress, uncertainty, decreased parenting confidence, and disrupted bonding with the infant, all of which can impact their psychological health and ability to make informed decisions about their infant's care and nutrition. Preterm infants have unique needs compared to full-term infants, including difficulties with breathing, feeding, and maintaining body temperature, which usually necessitates specialised care and support, crucial to their healthy development in neonatal care. The provision of accurate and accessible information to parents and families at these times is crucial, and educational methods can play a significant role in supporting parents of preterm infants. The method of delivering information can directly impact not only their understanding of the challenge at hand and subsequent decision-making, but their personal wellbeing and lived experiences of NICU. Different modes of information delivery, such as face-to-face, written materials |

| | |
|---|---|
| | (in physical form) and online sources may influence parental understanding, decision-making, and overall wellbeing throughout the infants' NICU journey. |
| **CONFLICT OF INTERESTS:** | None |

## Assessment

### Desirable Effects
**How substantial are the desirable anticipated effects?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Trivial<br>○ Small<br>● Moderate<br>○ Large<br>○ Varies<br>○ Don't know | Evidence based on 21 studies:<br>• 8 randomised controlled trials (Beheshtipour 2014, Franck 2011, Hoffenkamp 2014, Jaywant 202, Kongsaenkaew 2024, Nekavand 2014, Sabzevari 2019, Tiryaki 2024) [1-8]<br>• 3 non-randomised (Jang 2020, Pourkhani 2017, Zhang 2024) [9-11]<br>• 6 observational (Araque Salazar 2013, Brown 2013, Bueno 2018, Chivers 2016 [abstract only], Harrison 2017, Jones 2009) [12-17]<br>• 4 qualitative (Booth 2014 [abstract only], Boucher 2011, Franck 2024, Tada 2020) [18-21] | Most studies included a wide range of infant gestational age (GA), however:<br>Only 3 (Brown 2013, Franck 2024, Hoffenkamp 2014) included extremely preterm infants (<28 weeks)<br>3 (Boucher 2011, Jang 2020, Nekavand 2014) only included moderate-to-late preterm infants<br>7 (Araque Salazar 2013, Jones 2009, Kongsaenkaew 2024, Zhang 2024) included all hospitalised infants (preterm and LBW, potentially)<br><br>**Studies' settings:** globally diverse sample from urban hospitals across high-, middle-, and low-income countries, including both urban and tertiary care hospitals. Notably, no studies originate from Australasia, limiting direct applicability to Aotearoa New Zealand's context |

| Outcomes | Anticipated absolute effects* (95% CI) | | Relative effect (95% CI) | Nº of participants (studies) | Certainty of the evidence (GRADE) | Comments |
|---|---|---|---|---|---|---|
| | Risk with Standard care | Risk with additional education delivered through different methods (face-to-face, written, online) | | | | |
| Whānau preferences - Acceptability/usefulness of education | **Video education**<br>Bueno 2018 (questionnaire): All parents (100%) declared they would recommend the video to other parents. None of the included parents expressed discomfort by watching the video or indicated any negative aspects related to the video and its content. The video was considered as useful, easy to understand, easy to apply in clinical settings by the totality of the included parents. | | - | 246<br>(4 non-randomised studies) | - | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Harrison 2017 (survey): 44 of the 50 parents (88%) said they would recommend the video to other parents<br>**Written education**<br>Jones 2009 (questionnaire): 46 of 69 parents (67%) said the written education was very useful, 17 out of 69 parents (25%) said it was useful, 2 out of 69 parents (2%) didn't answer.<br>**Combination education**<br>Chivers 2016 (questionnaire): phone App and written information were the most useful methods of information delivery: 55.3% Using a smartphone App (26 respondents); 51% access to medical notes (24 respondents); 48.9 % regular progress charts (23 respondents) | | | | | |
| Whānau preferences - Satisfaction with care<br>assessed with: Questionnaire after face-to-face + written education<br>Scale from: 0 to 232 | The mean whānau preferences - Satisfaction with care was **217.6** | MD **59.42 higher**<br>(51.05 higher to 67.79 higher) | - | 100<br>(1 RCT) | ⨁⨁◯◯<br>Low[a,b,c] | |
| Decision-making - Perceived ability to make care decisions<br>assessed with: Survey after all educational methods<br>Scale from: 0 to 100 | The mean decision-making - Perceived ability to make care decisions was **71.31** | MD **11.37 higher**<br>(0.25 higher to 22.49 higher) | - | 42<br>(1 RCT) | ⨁⨁◯◯<br>Low[b,d] | |
| Decision-making, other outcomes | **Video education**<br>Harrison 2017 (questionnaire): After viewing the video, 47 of 49 (95.92%) parents intended to advocate for breastfeeding, skin-to-skin, or giving sucrose. | | - | 49<br>(1 non-randomised study) | - | |
| Whānau wellbeing - Maternal stress<br>assessed with: PSS:NICU scale (different versions) after face-to-face + written/video | The mean whānau wellbeing - Maternal stress was **0** SD | SMD **0.58 SD lower**<br>(1.29 lower to 0.12 higher) | - | 429<br>(4 RCTs) | ⨁◯◯◯<br>Very low[a,e] | |
| Whanau wellbeing - Paternal stress<br>assessed with: PSS:NICU scale (different versions) after face-to-face + written/video | The mean whanau wellbeing - Paternal stress was **0** SD | SMD **0.94 SD lower**<br>(1.37 lower to 0.5 lower) | - | 186<br>(2 RCTs) | ⨁⨁◯◯<br>Low[c,f] | |
| Whānau wellbeing - Stress<br>assessed with: Questionnaire after face-to-face + written<br>Scale from: 0 to 63 | The mean whānau wellbeing - Stress was **30.42** | MD **2.46 lower**<br>(4.64 lower to 0.28 lower) | - | 100<br>(1 RCT) | ⨁◯◯◯<br>Very low[a,b,c,] | |
| Whanau wellbeing - stress at discharge<br>assessed with: Depression Anxiety and Stress Scale DASS-21<br>Scale from: 0 to 21 | The mean whanau wellbeing - stress at discharge was **8.65** | MD **5.45 lower**<br>(7.34 lower to 3.56 lower) | - | 80<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,c,f] | |
| Whanau wellbeing - Stress | **Face-to-face and video education**<br>Brown 2013 (Case study, PSS:NICU 14-70 scale): 26 right after intervention, 20.5 at discharge. Lower stress | | - | 2<br>(1 non-randomised study) | - | |
| Whānau wellbeing - Maternal depression<br>assessed with: EPDS after face-to-face & face-to-face+video | | MD **5.74 lower**<br>(15.53 lower to 4.04 higher) | - | 346<br>(2 RCTs) | ⨁⨁◯◯<br>Low[c,f] | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Scale from: 0 to 30 | | | | | | |
| Whānau wellbeing - Depression<br>assessed with: DASS-21 scale after face-to-face + written<br>Scale from: 0 to 21 | | MD **3.05 lower**<br>(4.23 lower to 1.81 lower) | - | 80<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,c,f] | |
| Whānau wellbeing - Depression<br>assessed with: CES-D: Center for Epidemiological Studies—Depression questionnaire (Scale 0-60) | **Face-to-face and video education**<br>Brown 2013 (Case study): 24.5 right after intervention, 2.5 at discharge. Lower depression | | - | 2<br>(1 non-randomised study) | - | |
| Whānau wellbeing - Parenting confidence at discharge<br>assessed with: Pharis's Self-confidence Scale (Korean adaptation) after face-to-face + written<br>Scale from: 38 to 190 | The mean whānau wellbeing - Parenting confidence at discharge was **110.33** | MD **17.17 higher**<br>(4.48 higher to 29.86 higher) | - | 53<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,c] | |
| Whānau wellbeing - confidence | **Written education, reassurance**<br>Jones 2009 (cross-sectional, questionnaire): 10 respondents (11%) found the leaflet reassuring | | - | 10<br>(1 study) | - | |
| Whānau wellbeing - Parental anxiety<br>assessed with: State–Trait Anxiety Inventory STAI after face-to-face + video | | **0.31 lower**<br>(0.58 lower to 0.03 lower) | - | 294<br>(1 RCT) | ⨁◯◯◯<br>Very low[b,c,f] | |
| Whānau wellbeing - Anxiety at discharge<br>assessed with: Depression Anxiety and Stress Scale DASS-21 after face-to-face + written<br>Scale from: 0 to 21 | The mean whānau wellbeing - Anxiety at discharge was **6.1** | MD **4.63 lower**<br>(6.24 lower to 3.02 lower) | - | 80<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,c,f] | |
| Whānau wellbeing - Anxiety | **Face-to-face and video education**<br>Brown 2013 (Case study, State–Trait Anxiety Inventory STAI): 79 right after intervention, 50.5 at discharge. Lower anxiety | | - | 2<br>(1 non-randomised study) | - | |
| Whānau wellbeing - Maternal worry<br>assessed with: My Baby and I Questionnaire (MBI) after face-to-face + video<br>Scale from: 3 to 15 | | MD **0.04 lower**<br>(0.15 lower to 0.07 higher) | - | 150<br>(1 RCT) | ⨁◯◯◯<br>Very low[b,c,f] | |
| Whānau wellbeing - Hope<br>assessed with: Miller Hope Scale (MHS) after face-to-face + written<br>Scale from: 40 to 200 | | MD **27.18 higher**<br>(20.67 higher to 33.69 higher) | - | 100<br>(1 RCT) | ⨁⨁◯◯<br>Low[a,b,c] | |
| Breastfeeding knowledge<br>assessed with: Breastfeeding knowledge questionnaire (BKQ) after online education<br>Scale from: 0 to 18 | The mean breastfeeding knowledge was **15** | MD **0.33 higher**<br>(1.22 lower to 1.88 higher) | - | 41<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,d] | |
| Parental knowledge | **Face-to-face education, knowledge on taught concepts relating to KMC**<br>Araque Salazar (cohort): 6.67% pre intervention vs. 58.33% post intervention | | - | 10<br>(1 non-randomised study) | - | |
| Other lived experiences - Maternal self-efficacy | | MD **17.24 higher** | - | 42 | ⨁⨁◯◯ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| assessed with: Questionnaire after all educational methods<br>Scale from: 0 to 100 | | (7.43 higher to 27.05 higher) | | (1 RCT) | Low[b,d] | |
| Other lived experiences - Breastfeeding self-efficacy<br>assessed with: BSES scale (different ranges) after face-to-face + written | | SMD **1.69 SD higher**<br>(0.77 higher to 2.6 higher) | - | 152<br>(2 RCTs) | ⨁⨁◯◯<br>Low[d,g] | |
| Other lived experiences - Breastfeeding self-efficacy<br>assessed with: BSES (Chinese adaptation) after online<br>Scale from: 30 to 150 | | MD **3.68 higher**<br>(12.09 lower to 19.45 higher) | - | 41<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,f] | |
| Other lived experiences - Readiness for discharge<br>assessed with: Questionnaire after face-to-face<br>Scale from: 20 to 154 | | MD **33.4 higher**<br>(28.53 higher to 38.26 higher) | - | 68<br>(1 RCT) | ⨁⨁◯◯<br>Low[a,b,c] | |
| Time to reach full enteral feeds after face-to-face | The mean time to reach full enteral feeds after face-to-face was **20.26** days | MD **3.67 days fewer**<br>(10.04 fewer to 2.7 more) | - | 68<br>(1 RCT) | ⨁◯◯◯<br>Very low[a,b,d] | |
| Duration of hospital stay after face-to-face, and face-to-face + written | | MD **0.96 days fewer**<br>(5.49 fewer to 3.56 more) | - | 237<br>(2 RCTs) | ⨁◯◯◯<br>Very low[a,h] | |
| Duration of hospital stay after online | The mean duration of hospital stay after online was **13.33 days** | MD **1.33 days lower**<br>(6.89 lower to 4.23 higher) | - | 41<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,d,f] | |
| Breastfeeding at discharge after face-to-face + written | Study population | | **RR 1.21**<br>(0.47 to 3.13) | 53<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,d] | |
| | 22 per 100 | **27 per 100**<br>(10 to 70) | | | | |
| Weight at discharge after face-to-face | | MD **172.2 grams more**<br>(15.08 more to 329.32 more) | - | 68<br>(1 RCT) | ⨁◯◯◯<br>Very low[a,b,c] | |
| Weight at discharge after face-to-face + written | The mean weight at discharge after face-to-face + written was **2466.7** grams | MD **187.9 grams higher**<br>(14.62 higher to 361.18 higher) | - | 53<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,c] | |
| Length at discharge after face-to-face + written | The mean length at discharge after face-to-face + written was **47.4** cm | MD **0.2 cm more**<br>(1.04 fewer to 1.44 more) | - | 53<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,d] | |
| Head circumference at discharge after face-to-face + written | The mean head circumference at discharge after face-to-face + written was **32.9** cm | MD **0.6 cm more**<br>(0.02 fewer to 1.22 more) | - | 53<br>(1 non-randomised study) | ⨁◯◯◯<br>Very low[b,d] | |

a. Downgraded two levels for risk of bias due to concerns around randomisation and blinding process
b. Downgraded one level for indirectness as evidence is based on a single study
c. Downgraded one level for imprecision due to small sample size
d. Downgraded two levels for imprecision due to small sample size and wide confidence intervals that cross the line of no effect

e. Downgraded two levels for inconsistency due to considerable heterogeneity
f. Downgraded one level for risk of bias due to concerns around blinding process
g. Downgraded two levels for risk of bias due to lack of reporting
h. Downgraded two levels for imprecision due to methodological variability and wide confidence intervals that cross the line of no effect

Family wellbeing - confidence after **written education:**
Jones 2009 (cross-sectional, questionnaire): 10 respondents (11%) found the leaflet reassuring. "'I read the leaflet from cover to cover again and again. I found it encouraged me to persevere, even when my baby's condition took a nose dive. The parents' story made me keep going"

From the qualitative studies (Boucher 2011, Franck 2024, Tada 2020), we found that **face-to-face education is highly valued**:
Parents gained confidence in breastfeeding through tailored, hands-on instruction—nurses taught techniques like positioning, latching, and interpreting infant cues, with ongoing feedback that helped mothers feel more comfortable and competent.
Parents expressed the need for guidance to safely perform activities like nappy changes, skin-to-skin contact, and breastfeeding, as well as emotional reassurance.
Group sessions and individualised nurse support equipped parents with practical knowledge, confidence, and readiness for discharge and future caregiving responsibilities.

## Undesirable Effects
### How substantial are the undesirable anticipated effects?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ● Trivial<br>○ Small<br>○ Moderate<br>○ Large<br>○ Varies<br>○ Don't know | | |

| Outcomes | Anticipated absolute effects* (95% CI) | | Relative effect (95% CI) | Nº of participants (studies) | Certainty of the evidence (GRADE) | Comments |
|---|---|---|---|---|---|---|
| | Risk with Standard care | Risk with additional education delivered through different methods (face-to-face, written, online) | | | | |
| Whānau preferences - Acceptability/usefulness of education | **Written education**<br>Booth 2014 (questionnaire): 23.7% respondents stated that they did not receive enough written information<br>Jones 2009 (questionnaire): 4 out of 69 parents (6%) said the written education was not very useful, 2 out of 69 parents (2%) didn't answer. | | - | 92<br>(2 non-randomised studies) | - | |
| Whānau wellbeing - Paternal depression assessed with: EPDS after face-to-face+video<br>Scale from: 0 to 30 | The mean whānau wellbeing - Paternal depression was **3.9** | MD **0.47 higher**<br>(0.33 higher to 0.61 higher) | - | 144<br>(1 RCT) | ⨁⨁◯◯<br>Low[a,b,c] | |
| Whānau wellbeing - confidence | **Face-to-face and video education, maternal confidence**<br>Brown 2013 (Case study, questionnaire ranging 14-70): | | - | 2<br>(1 study) | - | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 65 right after intervention, 61 at discharge. Lower confidence | | | | | |
| Whānau wellbeing - Paternal worry<br>assessed with: My Baby and I Questionnaire (MBI)<br>after face-to-face + video<br>Scale from: 3 to 15 | The mean whānau wellbeing - Paternal worry was **6.3** | MD **0.08 higher**<br>(0.04 lower to 0.2 higher) | - | 144<br>(1 RCT) | ⨁◯◯◯<br>Very low[a,b,c] | |
| Other lived experiences - Parental bonding<br>assessed with: Parental bonding questionnaire (PBQ)<br>after face-to-face + video<br>Scale from: 0 to 125 | | MD **1.4 lower**<br>(2.77 lower to 0.04 lower) | - | 294<br>(1 RCT) | ⨁⨁◯◯<br>Low[a,b,c] | |

a. Downgraded one level for risk of bias due to concerns around blinding process
b. Downgraded one level for indirectness as evidence is based on a single study
c. Downgraded one level for imprecision due to small sample size

From one qualitative study (Tada 2020) we found:
Tada 2020: "Of the 19 mothers interviewed, four mothers did not receive education from healthcare workers. They were not satisfied with this experience and gave suggestions to improve the education given by healthcare workers. They suggested that healthcare workers 1) provide information about the risk of not achieving exclusive breastfeeding, 2) confirm understanding of individual mothers, 3) allocate time for education or identify a healthcare worker responsible for education, 4) emphasize things that are important, and 5) educate family members."

## Certainty of evidence

**What is the overall certainty of the evidence of effects?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Very low<br>● Low<br>○ Moderate<br>○ High<br>○ No included studies | Certainty of evidence at the outcome level: | |

| Outcomes | Importance | Certainty of the evidence (GRADE) |
|---|---|---|
| [RCT] Whānau preferences - Satisfaction with pain control information<br>assessed with: Questionnaire (lower=more satisfied) after face-to-face + written education<br>Scale from: 1 to 6 | CRITICAL | ⨁⨁⨁◯<br>Moderate |
| [RCT] Whānau preferences - Satisfaction with care<br>assessed with: Questionnaire after face-to-face + written education<br>Scale from: 0 to 232 | CRITICAL | ⨁⨁◯◯<br>Low |
| [RCT] Decision-making - Perceived ability to make care decisions<br>assessed with: Survey after all educational methods<br>Scale from: 0 to 100 | CRITICAL | ⨁⨁◯◯<br>Low |

| | | |
|---|---|---|
| [RCT] Whānau wellbeing - Maternal stress<br>assessed with: PSS:NICU scale (different versions) after face-to-face + written/video | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Whanau wellbeing - Paternal stress<br>assessed with: PSS:NICU scale (different versions) after face-to-face + written/video | CRITICAL | ⨁⨁⨁◯<br>Moderate |
| [RCT] Whānau wellbeing - Stress<br>assessed with: Questionnaire after face-to-face + written<br>Scale from: 0 to 63 | CRITICAL | ⨁◯◯◯<br>Very low |
| [Non-randomised] Whanau wellbeing - stress at discharge<br>assessed with: Depression Anxiety and Stress Scale DASS-21<br>Scale from: 0 to 21 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Whānau wellbeing - Maternal depression<br>assessed with: EPDS after face-to-face & face-to-face+video<br>Scale from: 0 to 30 | CRITICAL | ⨁⨁◯◯<br>Low |
| [RCT] Whānau wellbeing - Paternal depression<br>assessed with: EPDS after face-to-face+video<br>Scale from: 0 to 30 | CRITICAL | ⨁⨁◯◯<br>Low |
| [Non-randomised] Whānau wellbeing - Depression at discharge<br>assessed with: DASS-21 scale after face-to-face + written<br>Scale from: 0 to 21 | CRITICAL | ⨁◯◯◯<br>Very low |
| [Non-randomised] Whānau wellbeing - Parenting confidence at discharge<br>assessed with: Pharis's Self-confidence Scale (Korean adaptation) after face-to-face + written<br>Scale from: 38 to 190 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Whānau wellbeing - Parental anxiety<br>assessed with: State–Trait Anxiety Inventory STAI after face-to-face + video | CRITICAL | ⨁◯◯◯<br>Very low |
| [Non-randomised] Whānau wellbeing - Anxiety at discharge<br>assessed with: Depression Anxiety and Stress Scale DASS-21 after face-to-face + written<br>Scale from: 0 to 21 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Whānau wellbeing - Maternal worry<br>assessed with: My Baby and I Questionnaire (MBI) after face-to-face + video<br>Scale from: 3 to 15 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Whānau wellbeing - Paternal worry<br>assessed with: My Baby and I Questionnaire (MBI) after face-to-face + video<br>Scale from: 3 to 15 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Whānau wellbeing - Hope<br>assessed with: Miller Hope Scale (MHS) after face-to-face + written<br>Scale from: 40 to 200 | CRITICAL | ⨁⨁◯◯<br>Low |
| [Non-randomised] Breastfeeding knowledge<br>assessed with: Breastfeeding knowledge questionnaire (BKQ) after online education<br>Scale from: 0 to 18 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Other lived experiences - Maternal self-efficacy | CRITICAL | ⨁⨁⨁◯ |

| | | |
|---|---|---|
| assessed with: Questionnaire after all educational methods<br>Scale from: 0 to 100 | | Moderate |
| [RCT] Other lived experiences - Breastfeeding self-efficacy<br>assessed with: BSES scale (different ranges) after face-to-face + written | CRITICAL | ⨁⨁◯◯<br>Low |
| [Non-randomised] Other lived experiences - Breastfeeding self-efficacy<br>assessed with: BSES (Chinese adaptation) after online<br>Scale from: 30 to 150 | CRITICAL | ⨁◯◯◯<br>Very low |
| [RCT] Other lived experiences - Parental bonding<br>assessed with: Parental bonding questionnaire (PBQ) after face-to-face + video<br>Scale from: 0 to 125 | CRITICAL | ⨁⨁◯◯<br>Low |
| [RCT] Other lived experiences - Readiness for discharge<br>assessed with: Questionnaire after face-to-face<br>Scale from: 20 to 154 | CRITICAL | ⨁⨁◯◯<br>Low |
| [RCT] Time to reach full enteral feeds after face-to-face | IMPORTANT | ⨁◯◯◯<br>Very low |
| [RCT] Duration of hospital stay after face-to-face, and face-to-face + written | IMPORTANT | ⨁◯◯◯<br>Very low |
| [Non-randomised] Duration of hospital stay after online | IMPORTANT | ⨁◯◯◯<br>Very low[a] |
| [Non-randomised] Breastfeeding at discharge after face-to-face + written | IMPORTANT | ⨁◯◯◯<br>Very low |
| [RCT] Weight at discharge after face-to-face | IMPORTANT | ⨁◯◯◯<br>Very low |
| [Non-randomised] Weight at discharge after face-to-face + written | IMPORTANT | ⨁◯◯◯<br>Very low |
| [Non-randomised] Length at discharge after face-to-face + written | IMPORTANT | ⨁◯◯◯<br>Very low |
| [Non-randomised] Head circumference at discharge after face-to-face + written | IMPORTANT | ⨁◯◯◯<br>Very low |

Quality of qualitative studies was moderate/high:

**QUALITATIVE STUDIES: CRITICAL APPRAISAL SKILLS PROGRAMME (CASP) CHECKLIST**

Table 5. CASP checklist for appraisal of qualitative studies

| | Boucher 2011 | Franck 2024 | Tada 2020 |
|---|---|---|---|
| *Section A: Are the results valid?* | | | |
| 1. Was there a clear statement of the aims of the research? | Yes | Yes | Yes |
| 2. Is a qualitative methodology appropriate? | Yes | Yes | Yes |
| 3. Was the research design appropriate to address the aims of the research? | Yes | Yes | Yes |
| 4. Was the recruitment strategy appropriate to the aims of the research? | No | Yes | Yes |
| 5. Was the data collected in a way that addressed the research issue? | Yes | Yes | Yes |
| 6. Has the relationship between researcher and participants been adequately considered? | No | No | Yes |
| *Section B: What are the results?* | | | |
| 7. Have ethical issues been taken into consideration? | Yes | Yes | Yes |
| 8. Was the data analysis sufficiently rigorous? | Yes | Yes | Yes |
| 9. Is there a clear statement of findings? | No | No | Yes |
| Section C: Will the results help locally? | | | |
| 10. How valuable is the research? | Yes | Yes | Yes |
| **Overall quality assessment (High, Moderate, Low)** | **Moderate** | **High** | **High+** |

## Values

**Is there important uncertainty about or variability in how much people value the main outcomes?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Important uncertainty or variability<br>● Possibly important uncertainty or variability<br>○ Probably no important uncertainty or variability<br>○ No important uncertainty or variability | Parents often value receiving information that is not only comprehensive but also tailored to their infant's specific needs and their own circumstances. This might be not as high in the priority list for staff in the neonatal ward, likely due to a focus on clinical survival, limited educational resources/training and short staffing. | Critical outcomes of this question are:<br>Family information preferences<br>Family decision-making experiences<br>Family wellbeing<br>Parental understanding of information received: self-reported and measured.<br>Other lived experiences of receiving information throughout their infants' NICU journey. |

## Balance of effects

**Does the balance between desirable and undesirable effects favour the intervention or the comparison?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Favours the comparison<br>● Probably favours the comparison<br>○ Does not favour either the intervention or the comparison<br>○ Probably favours the intervention<br>○ Favours the intervention<br>○ Varies<br>○ Don't know | **High quality evidence (qualitative studies)**<br>Increased parental confidence in breastfeeding and infant care through hands-on, tailored instruction from nurses *(face-to-face)*<br>Greater emotional reassurance and preparedness for discharge and future caregiving through group and individual education and support during the NICU stay *(face-to-face)*<br><br>**Moderate certainty evidence**<br>Increased maternal self-efficacy and satisfaction with pain control information *(combination)*<br>Reduced paternal stress *(combination)*<br><br>**Low certainty evidence**<br>Increased satisfaction with care, hope and breastfeeding self-efficacy *(combination)*<br>Improved decision-making *(combination)*<br>Reduced maternal depression *(face-to-face & combination)*<br>Increased readiness for discharge *(face-to-face)*<br>Increased paternal depression *(combination)*<br>Slightly reduced parental bonding *(combination)*<br><br>**Very low certainty evidence**<br>Increased breastfeeding self-efficacy and breastfeeding knowledge *(App)*<br>Increased parenting confidence *(combination)*<br>Slightly reduced maternal worry *(combination)*<br>Increased paternal worry *(combination)*<br>Reduced anxiety, maternal stress and stress levels at discharge *(combination)*<br>Slightly higher weight, length, head circumference and rates of breastfeeding at discharge *(face-to-face & combination)*<br>Lower duration of hospital stay and time to full enteral feeds *(face-to-face & combination)*<br>Minor undesirable effects such as inconsistent delivery or insufficient written information *(written)* | |

## Resources required

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Large costs<br>● Moderate costs<br>○ Negligible costs and savings<br>○ Moderate savings<br>○ Large savings | Additional staff time to deliver information (from nurses, lactation consultants and/or neonatologists). Potentially, allocating educators for staff to be trained.<br>If information is to be delivered online or via App, the pertinent technology would have to be available / purchased | |

| | | |
|---|---|---|
| ○ Varies<br>○ Don't know | | |

## Certainty of evidence of required resources

**What is the certainty of the evidence of resource requirements (costs)?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ● Very low<br>○ Low<br>○ Moderate<br>○ High<br>○ No included studies | We are relatively certain of what would be needed for the intervention, however not as certain about how much it would cost to each unit exactly. | |

## Cost effectiveness

**Does the cost-effectiveness of the intervention favour the intervention or the comparison?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Favours the comparison<br>○ Probably favours the comparison<br>○ Does not favour either the intervention or the comparison<br>● Probably favours the intervention<br>○ Favours the intervention<br>○ Varies<br>○ No included studies | Rice et al. (2010), in the UK, assessed the cost-effectiveness of providing *enhanced staff contact* to mothers of low-birth-weight infants in NICU, defined as providing individualised education, support and care plans by specially trained NICU staff.<br>Compared to standard care, the intervention was found to lower overall costs and improve health outcomes across all weight groups, driven largely by increased breastmilk intake and reduced NEC.<br>The model estimated savings of £66–£586 per infant and quality-adjusted life-years (QALYs) of +0.01 – +0.25, with the largest cost saving (£586 per infant) and health gain (+0.25 QALYs) in the 500–999g group.<br><br>These findings suggest that enhanced staffing focused on lactation support may be a **cost-effective strategy**, especially for infants under 1,750g. However, the authors emphasised that this was the first economic evaluation in this field and highlighted the need for further research to confirm these findings with greater confidence. | A cost-effectiveness analysis may need to be undertaken in Aotearoa New Zealand. |

## Equity

What would be the impact on health equity?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Reduced<br>○ Probably | **Equity for Māori:** Whānau Māori navigating neonatal care often encounter systemic barriers that limit their access to timely, culturally grounded education. Standard care may not adequately | |

| | | |
|---|---|---|
| reduced<br>○ Probably no impact<br>● Probably increased<br>○ Increased<br>○ Varies<br>○ Don't know | reflect mātauranga Māori or support meaningful engagement in feeding and wellbeing decisions. When additional education is delivered in ways that honour Māori values—such as kanohi ki te kanohi (face-to-face), through trusted relationships, and in culturally safe formats—it can enhance understanding, build trust, and empower whānau to advocate for their pēpi. Equity-focused interventions must prioritise relational, inclusive communication and ensure Māori voices shape how information is shared and understood.<br><br>**Equity for Pacific Peoples:** Pacific families bring strong collective values and caregiving traditions to neonatal care, yet often face gaps in communication and culturally relevant education. Standard care may overlook the importance of family involvement and the need for accessible, respectful information. Additional education—especially when delivered in community-informed formats such as visual materials, translated resources, or online platforms co-designed with Pacific health workers—can improve confidence and support informed decision-making. Equity means recognising diverse learning preferences and ensuring Pacific families are supported throughout their care journey with culturally affirming education.<br><br>**Equity for Other Underrepresented Groups:** Families from migrant, low-income, or rural backgrounds may struggle to access consistent and understandable information about neonatal care and feeding. Language barriers, digital exclusion, and limited transport can reduce their ability to engage with standard care. Additional education that is flexible—offered online, in print, or through interpreters—and tailored to individual needs can help bridge these gaps. Equity requires not only providing information, but ensuring families are equipped to act on it, with support systems that reflect their realities and strengths. | |

## Acceptability

**Is the intervention acceptable to key stakeholders?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ No<br>○ Probably no<br>● Probably yes<br>○ Yes<br>○ Varies<br>○ Don't know | Probably acceptable to all relevant stakeholders, as we all want to prioritise whānau wellbeing and whānau -centred care | |

## Feasibility

**Is the intervention feasible to implement?**

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ No<br>○ Probably no | Potential issues around staffing to provide additional and more tailored information delivery | |

| | | |
|---|---|---|
| ○ Probably yes<br>○ Yes<br>● Varies<br>○ Don't know | | |

## Summary of judgements

| | JUDGEMENT | | | | | | |
|---|---|---|---|---|---|---|---|
| DESIRABLE EFFECTS | Trivial | Small | **Moderate** | Large | | Varies | Don't know |
| UNDESIRABLE EFFECTS | **Trivial** | Small | Moderate | Large | | Varies | Don't know |
| CERTAINTY OF EVIDENCE | Very low | **Low** | Moderate | High | | | No included studies |
| VALUES | Important uncertainty or variability | **Possibly important uncertainty or variability** | Probably no important uncertainty or variability | No important uncertainty or variability | | | |
| BALANCE OF EFFECTS | Favours the comparison | **Probably favours the comparison** | Does not favour either the intervention or the comparison | Probably favours the intervention | Favours the intervention | Varies | Don't know |
| RESOURCES REQUIRED | Large costs | **Moderate costs** | Negligible costs and savings | Moderate savings | Large savings | Varies | Don't know |
| CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES | **Very low** | Low | Moderate | High | | | No included studies |
| COST EFFECTIVENESS | Favours the comparison | Probably favours the comparison | Does not favour either the intervention or the comparison | **Probably favours the intervention** | Favours the intervention | Varies | No included studies |
| EQUITY | Reduced | Probably reduced | Probably no impact | **Probably increased** | Increased | Varies | Don't know |
| ACCEPTABILITY | No | Probably no | **Probably yes** | Yes | | Varies | Don't know |
| FEASIBILITY | No | Probably no | Probably yes | Yes | | **Varies** | Don't know |

## Type of recommendation

| Strong recommendation against the intervention | Conditional recommendation against the intervention | Conditional recommendation for either the intervention or the comparison | **Conditional recommendation for the intervention** | Strong recommendation for the intervention |
|---|---|---|---|---|
| ○ | ○ | ○ | ● | ○ |

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