2026 WFOT

Systematic Review of Health Literacy Interventions Targeting Parents of Preterm Infants

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Background & Purpose

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- Parents of preterm infants face complex medical information in NICU settings
- Limited health literacy is linked to:
  - Higher parental stress
  - Reduced confidence in caregiving
- Supporting parental understanding is essential for family-centered neonatal care

  OTs support parents' participation and transition to home care

- To systematically review health literacy interventions for parents of preterm infants
- To examine:
  - Types of interventions
  - Effects on parents
  - Effects on infant health outcomes
- To identify implications for occupational therapy practice

Methods: Search & Eligibility

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- Databases:

  PubMed, Embase, CINAHL, Cochrane, Web of Science

- Publication period:

  January 2014 - November 2024

- PRISMA-guided screening process
- 11 studies included in the final review

Inclusion Criteria

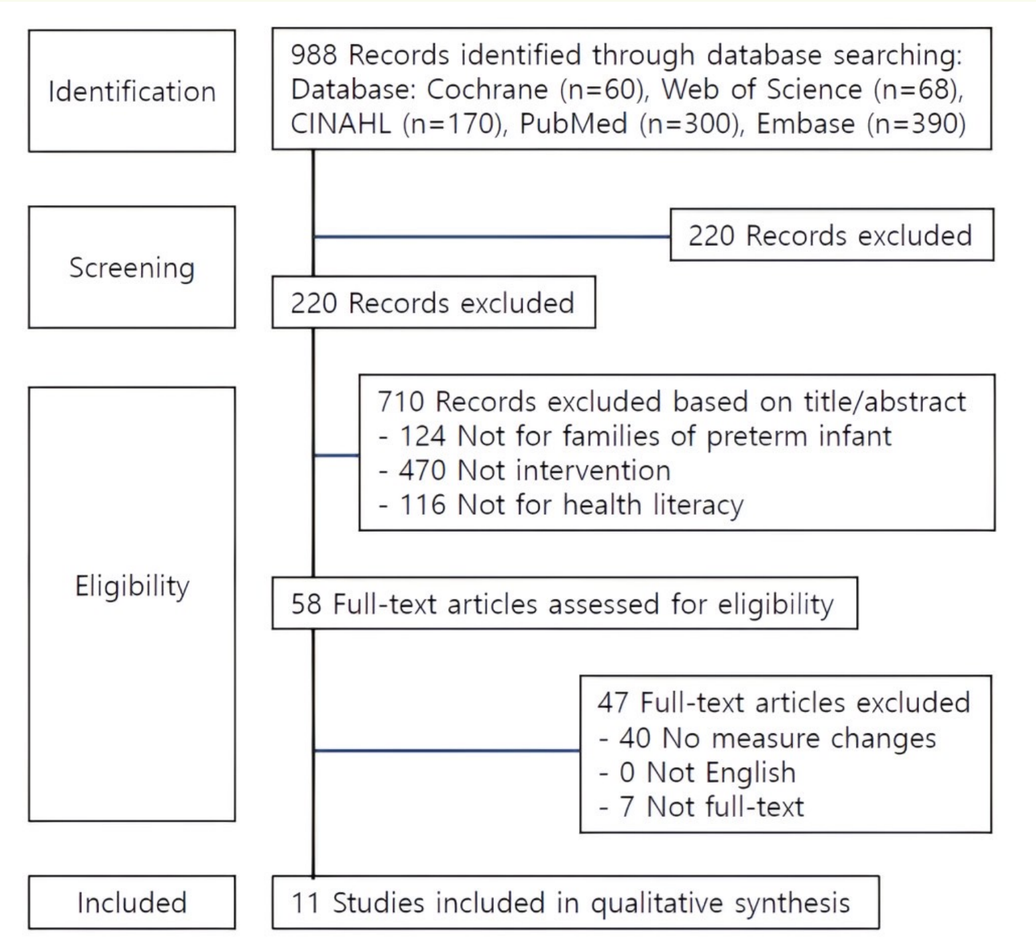
- Parents of preterm infants or NICU-admitted infants
- Health literacy-focused interventions
- Quantitative outcome measures

Exclusion Criteria

- Reviews, meta-analyses, dissertations
- No measurable outcomes
- Non-English or unavailable full text

PRISMA flow chart

(Preferred Reporting Items for Systematic Reviews and Meta-analyses)



Study Design and Quality of Evidence

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- Randomized controlled trials (n = 3)
  - Assessed using the **PEDro Scale**
  - High methodological quality (scores 6-8)
- Non-randomized studies (n = 8)
  - Assessed using **ROBINS-I**
  - Moderate to serious risk of bias
- **Study quality considered in interpretation of findings**

The classification of evidence level (N=11)

Classification	Frequency (%)
Level I	
Systematic reviews	0 (0)
Meta-analyses	0 (0)
Randomized controlled trials	3 (27.3)
Level II	
Two-group nonrandomized controlled studies	5 (45.5)
Level III	
One-group nonrandomized controlled studies	3 (27.3)
Level IV	
Single-subject studies	0 (0)
Survey	0 (0)
Level V	
Case reports	0 (0)
Narrative literature review	0 (0)
Qualitative research	0 (0)

Results: PICO

Table 1. PICO summary for literature

No.	Reference	Participants	Intervention	Comparison	Intervention Type	Measurement	Outcome Classification	Results
1	Franck et al. (2019)	Parents of infants born ≤33 wk gestation (N=375 parent-infant pairs)	Mobile technology-enhanced family integrated care (mFICare)	Standard NICU care	Digital-based	Surveys, data collection via mobile app	Parental health literacy, parent stress, competence, self-efficacy	mFICare group showed improved health literacy and confidence
2	Mohamed et al. (2022)	60 Mothers of preterm infants (study group: 30, control group: 30)	Maternal partnership discharge program	Standard discharge program	Face-to-face	Pre- and postknowledge scores	Knowledge of preterm care, infant health outcomes	Study group had better knowledge, weight gain, and reduced infection rates
3	Hirter et al. (2024)	Mothers of preterm infants (N =68 COPE, N=73 control)	COPE: 4-phase educational intervention	Standard parental support	Multistage integrated	TOPSE self-efficacy surveys	Maternal self-efficacy, learning & knowledge	COPE improved maternal learning & self-efficacy
4	Phagdol et al. (2023)	160 Mothers of preterm infants	mHealth application for preterm home care	No app-based intervention	Digital-based	Knowledge questionnaire (32 items)	Parental knowledge of preterm care	Significant increase in parental knowledge of home care
5	McCahon et al. (2023)	Parents of neonates (premature or surgically treated) transitioning from hospital to home (N=240)	Optimized educational materials on ROP	Standard follow-up education	Specialized Educational Tools	Pre- and postsurveys on ROP	ROP knowledge, follow-up attendance	Significant improvement in ROP knowledge and follow-up rates
6	Li et al. (2022)	116 Mothers of preterm infants	PRECEDE-PROCEED model for discharge education	Standard education approach	Multistage Integrated	Care knowledge, competence assessment	Care knowledge, skills, competence, readmission rates	Improved competence and lower readmission rate
7	Sandoval-Cuellar et al. (2023)	130 preterm infants (moderate to late preterm, 34–37 wk gestational age)	Hospital-home intervention with motor development strategies	Standard hospital discharge process	Digital-based	TIMPSI and parental knowledge questionnaire	Infant motor development, parental knowledge	Increased motor development and parental knowledge
8	Cheng et al. (2018)	52 Mothers with preterm infants	Preterm infant care learning portfolio	Pre- vs. postintervention comparison	Face-to-face	Pre- and postdischarge questionnaires	Knowledge, skills, maternal confidence	Greater improvement in participation and confidence
9	Zhang et al. (2024)	50 Mothers of preterm infants	3-Month online breastfeeding education via WeChat	Pre- vs. postintervention comparison	Digital-Based	Breastfeeding knowledge questionnaire	Breastfeeding knowledge, attitudes, self-efficacy	Improved breastfeeding knowledge but no change in attitudes
10	Benzies et al. (2017)	Mothers and their preterm infants (32 to 34 wk gestation) in 10 level II NICUs in Alberta, with 181 dyads per group, totaling 362 participants	Family integrated care model	Standard NICU care	Family-centered care	NICU stay length, clinical outcomes	NICU length of stay, infant health, parental distress	Shorter NICU stays, improved breastfeeding rates, reduced distress
11	Globus et al. (2016)	Parents of preterm infants hospitalized in a tertiary NICU, with a total of 178 parents (91 preintervention, 87 postintervention)	SMS-based daily medical updates	Pre- vs. postintervention comparison	Digital-based	Pre- and post-SMS implementation surveys	Parental trust, anxiety, satisfaction with medical staff	Increased trust and satisfaction with medical updates

P : **Participants** (parents of preterm infants)

I : **Interventions** (health literacy-focused education and support)

C : **Comparisons** (standard care or pre-post comparisons)

O : **Outcomes** (parental knowledge, confidence, and infant health outcomes)

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Results: Methodological Quality

PEDro scale
for quality assessment
(4 studies)

Study	PEDro criterion score										
	2	3	4	5	6	7	8	9	10	11	Total
Phagdol et al. (2023)	Y	Y	Y	N	N	N	Y	Y	Y	Y	7
Li et al. (2022)	Y	N	Y	N	N	N	Y	Y	Y	Y	6
Sandoval-Cuellar et al. (2023)	Y	Y	N	Y	N	Y	Y	Y	Y	Y	8
Benzies et al. (2017)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	8
Total Y ratings	4/4	3/4	3/4	1/4	0/4	2/4	4/4	4/4	4/4	4/4	

PEDro, Physiotherapy Evidence Database; Y, yes; N, no.

Study	Bias due to confounding	Selection bias	Classification bias	Deviation from intended intervention	Missing data bias	Measurement bias	Reporting bias	Overall risk of bias
Franck et al. (2019)	Moderate	Moderate	Low	Moderate	Moderate	Low	Low	Moderate
Mohamed et al. (2022)	Moderate	Moderate	Low	Moderate	Moderate	Low	Low	Moderate
Hirter et al. (2024)	Serious	Serious	Low	Moderate	Moderate	Moderate	Low	Serious
McCahon et al. (2023)	Serious	Moderate	Low	Moderate	Moderate	Moderate	Low	Serious
Cheng et al. (2018)	Serious	Moderate	Low	Moderate	Moderate	Moderate	Low	Serious
Zhang et al. (2024)	Moderate	Serious	Low	Moderate	Moderate	Moderate	Low	Serious
Globus et al. (2016)	Serious	Moderate	Low	Moderate	Moderate	Moderate	Low	Serious

Robins-I
for quality assessment
(7 studies)

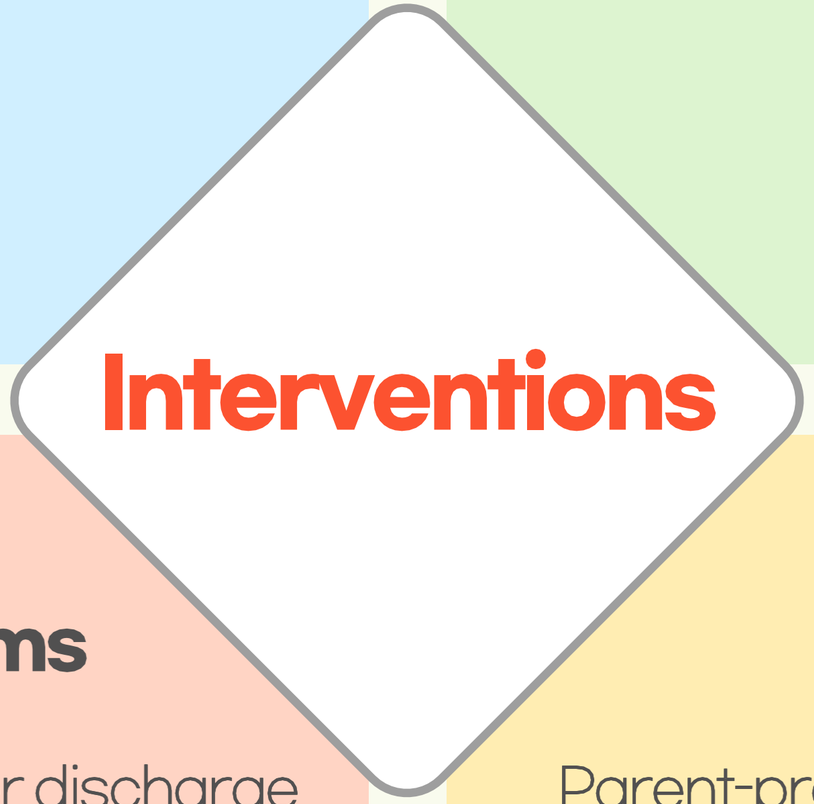
Results: Types of Interventions

Digital-based interventions

Mobile applications, SMS, online education

Face-to-face education

Structured in-person parent education



Multistage or integrated programs

Education before and after discharge

Family-centered approaches

Parent-provider partnership models

Results: Parent & Infant Outcomes

Parent Outcomes

- Improved parental **health literacy** and **knowledge**
- Increased **self-efficacy** and caregiving confidence
- Reduced **stress** and **anxiety**
- Greater engagement in **infant care** and **decision-making**

Infant Outcomes

- Improved **weight** gain
- Reduced **infection rates**
- Better **follow-up adherence** after discharge
- Positive effects on **health and developmental outcomes**

Implications for Occupational Therapy

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OT roles include:

- Designing parent education programs
- Supporting NICU-to-home transitions
- Integrating digital and face-to-face education
- Promoting family-centered care

Example of Health Literacy-Informed Practice

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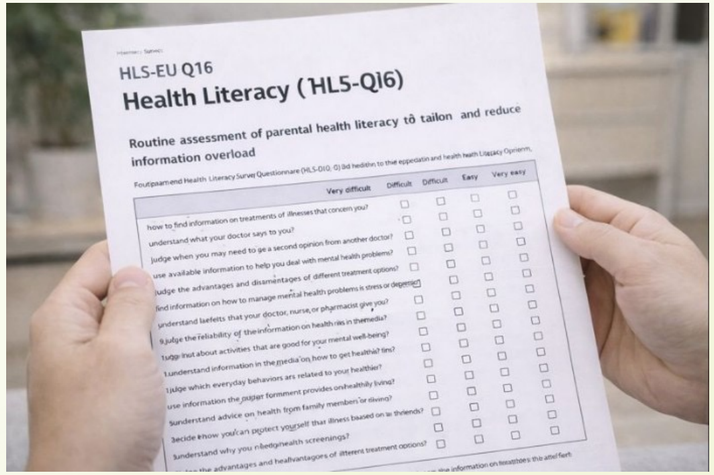
Multilingual educational pamphlets for NICU parents

Designated explanation therapists or nurses providing consistent, repeated explanations

Digital delivery of materials via the hospital EHR system (e.g., HiChart)

Support from the International Healthcare Services team for non–Korean-speaking families

Short instructional videos on key caregiving routines (e.g., feeding, positioning)



Routine assessment of parental health literacy to tailor education and reduce information overload

Conclusion

Take-home message

- Health literacy interventions for parents of preterm infants are effective
- Sustained and tailored approaches are needed
- Occupational therapy plays a critical role in empowering parents
- Strengthening parent health literacy is a modifiable and actionable target in neonatal care

THANK YOU

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