Newborn Home Care During the First Year of Life: Maternal Self-Efficacy and Associated Maternal and Neonatal Factors in Brazil

Supplementary files

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Supplementary Table S1. Strengthening the Reporting of Observational Studies in Epidemiology guideline (STROBE)

	Item No	Recommendation	Page no.
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	01
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	01
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	02
Objectives	3	State specific objectives, including any prespecified hypotheses	02
Methods			
Study design	4	Present key elements of the study design early in the paper	03
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	03 and 04
Participants	6	*Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	03
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	03 and 04
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe the comparability of assessment methods if there is more than one group	03 and 04
Bias	9	Describe any efforts to address potential sources of bias	04 and 05
Study size	10	Explain how the study size was arrived at	05
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	05
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	05
		(*b*) Describe any methods used to examine subgroups and interactions	05
		(*c*) Explain how missing data were addressed	05
		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	05
		(*e*) Describe any sensitivity analyses	05

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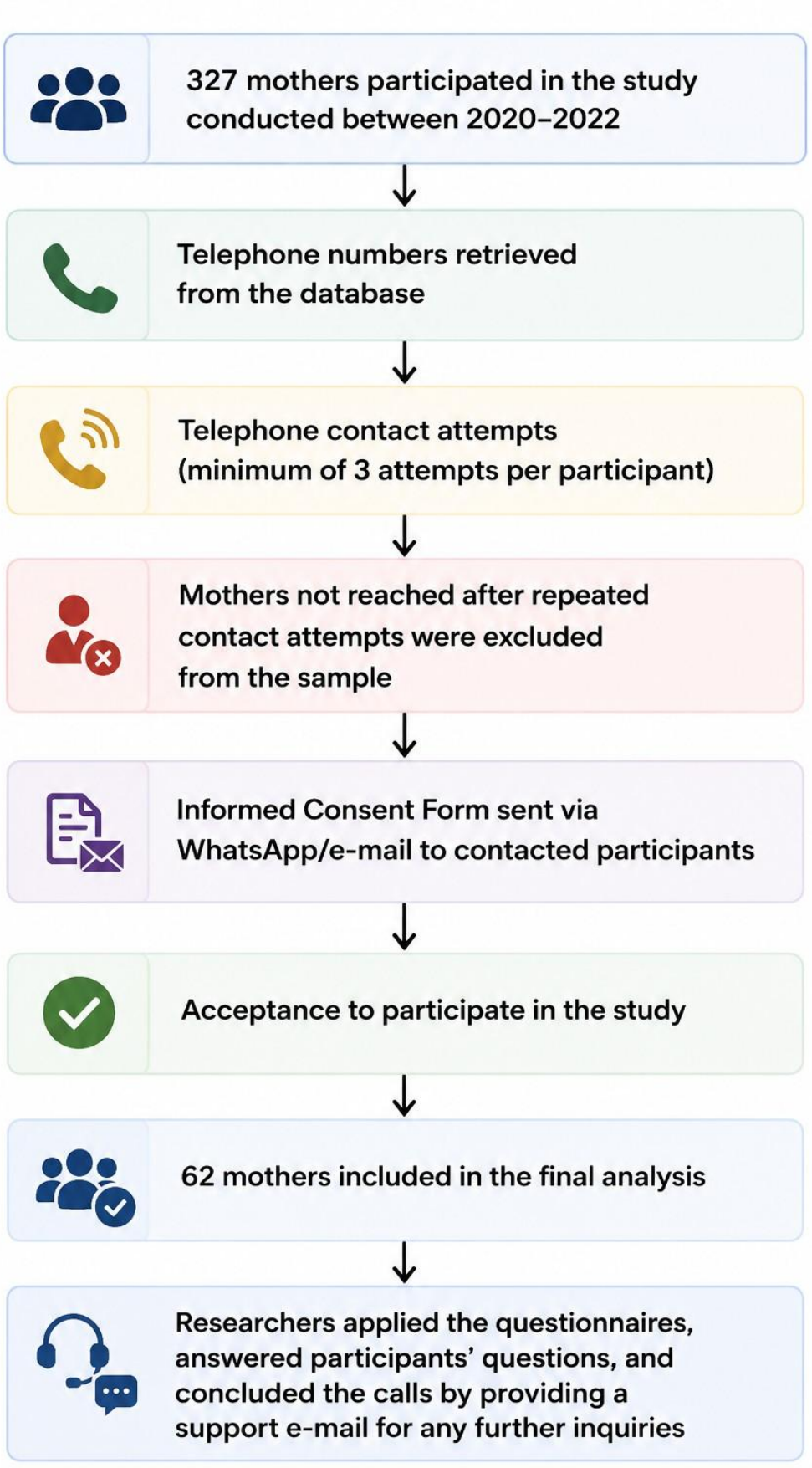
Results		
Participants	13 *	(a)The sample was census-based; therefore, the researchers contacted all 327 mothers who had been involved in 2020-2022. Using the telephone numbers registered in the database, participants were invited to take part in the present study, in which the self-efficacy instrument was administered, in addition to maternal self-reports on sociodemographic characteristics and clinical conditions of the newborns. A minimum of three attempts was made for each number until the process was completed with 62 mothers.
		(b) Non-participation at different stages of the study occurred due to unsuccessful telephone contact after at least three attempts.
		(c) Consider use of a flow diagram on page 04
Descriptive data	14 *	(a) The characteristics of the participants included maternal sociodemographic variables, such as age, place of residence, marital status, support network, educational level, occupation, family income, parity, and number of living children, which are presented in Table 1. Obstetric and neonatal clinical characteristics, including gestational age at birth, hospitalization in the Neonatal Intensive Care Unit (NICU) or Intermediate Neonatal Care Unit (UCINCo), admission to the Kangaroo Care Unit, length of hospital stay, birth weight, Apgar scores, weight at hospital discharge, neonatal resuscitation, respiratory distress syndrome, intubation, congenital malformations, sepsis, birth trauma, and COVID-19 diagnosis, are presented in Table 2. In addition, maternal self-efficacy domains include self-efficacy score, perceived self-efficacy score, task importance score, and perceived parental competence score. These variables were analyzed as potential factors associated with maternal self-efficacy.
		(b) No missing data were identified for the variables of interest.
Outcome data	15 *	In the cross-sectional study, outcome data were reported through summary measures of maternal self-efficacy, including total self-efficacy score, perceived self-efficacy score, task importance score, and perceived parental competence score. Descriptive analyses included frequencies, percentages, means, and standard deviations according to the characteristics of the participants.
Main results	16	(*a*) Unadjusted and adjusted estimates were presented for the variables associated with maternal self-efficacy, together with their respective measures of precision, including 95% confidence intervals and p-values. Variables considered potential confounding factors, such as maternal age, educational level, family income, gestational age, and neonatal clinical conditions, were included in the adjusted analyses based on clinical relevance and evidence from the literature. Continuous variables were categorized according to clinically relevant cut-off points and categories previously established in the literature. Relative measures of association were presented according to the study objectives and statistical model adopted.
		(*b*) Continuous variables were categorized according to predefined cut-off points.
Other analyses	17	No additional analyses, such as subgroup, interaction, or sensitivity analyses, were performed.
Discussion		

Key results	18	The key results of this study, presented on page 11, suggest that maternal self-efficacy in home-based infant care was associated with the number of children, maternal education, and neonatal clinical conditions, particularly Apgar score and intubation. Although most mothers had only one child, the presence of additional children at home showed a positive influence on overall self-efficacy and its specific domains. Maternal education and neonatal clinical variables positively influenced specific self-efficacy domains, especially perceived parental competence and task importance.
Limitations	19	This study has limitations related to its cross-sectional design, as presented on page 13, which provides only a snapshot of a specific moment in time and does not allow causal relationships to be established. In addition, the reduced sample size resulting from participant losses associated with telephone-based data collection may have introduced selection bias and limited the generalizability of the findings.
Interpretation	20	The findings of this study should be interpreted with caution, considering the cross-sectional design, reduced sample size, and participant losses associated with telephone-based data collection. Despite these limitations, the results suggest that maternal self-efficacy in home-based infant care may be influenced by maternal experience, educational level, and neonatal clinical conditions. These findings are consistent with evidence from previous studies demonstrating the relevance of maternal and neonatal factors in the development of parental competence and confidence in infant care. The study contributes to the understanding of factors associated with maternal self-efficacy and reinforces the importance of healthcare strategies aimed at supporting mothers during hospitalization and after hospital discharge.
Generalisability	21	The generalisability of the study findings should be considered with caution, as the research was conducted with mothers from a specific population and healthcare context in Brazil. In addition, the reduced sample size and participant losses may limit the external validity of the results. However, the findings provide relevant evidence regarding maternal self-efficacy in home-based infant care and may contribute to the development of healthcare strategies for mothers and newborns with similar clinical and social characteristics in other settings.
Other information		
Funding	22	This study was supported by the Chiesi Foundation Research Grant 2019 in Neonatology (prot. IRCCS n. 8142/2019—Registro Contratti n.1091) awarded to the Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy. The funding source contributed to the conduct of the study and support of the research activities.

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the websites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Supplementary Figure S1. Standardized Telephone Call Script



Supplementary Materials Table S2. Key characteristics of questionnaires used for data collection.

Outcome	Questionnaire	Number of domains and questions	Period to which questions refer to	Score range	Cut-offs used in literature
Self-Efficacy	Preterm Parenting & Self-Efficacy Checklist (PPSEC)	The instrument consists of 36 items designed to assess parental self-efficacy in caregiving tasks for preterm and term infants. It is divided into three domains: perceived self-efficacy, task importance, and perceived parental competence, with 12 items in each domain.	Referring to the first year of life after the infant's discharge	1-7	Scores are based on a Likert scale, ranging from 12–84 per domain and 36–252 in total. Self-efficacy is classified as low (36–84), moderate (85–168), and high (169–252).
Maternal sociodemographic variables and neonatal clinical variables	Structured questionnaire	Maternal sociodemographic domain: Age; Place of residence; Marital status; Support network; Maternal education; Family income; Gestational age at birth; Number of	At birth and during hospitalization	Not applicable (categorical and continuous variables without scoring system)	Not applicable

		living children; Parity. Neonatal clinical domain: Hospitalization in NICU or Intermediate Care Unit (UCINCo); Admission to Kangaroo Care Unit; Total length of hospital stay; Birth weight; Apgar score; Weight at hospital discharge; Neonatal resuscitation; Respiratory distress syndrome; Intubation			