



Functional health literacy of mothers of premature newborns admitted to a neonatal unit

Letramento funcional em saúde de mães de recém-nascidos prematuros internados em uma unidade neonatal

Gracielly Karine Tavares Souza¹
ORCID: <http://orcid.org/0000-0003-4145-2567>

Ana Paula Esmeraldo Lima²
ORCID: <http://orcid.org/0000-0002-8447-4072>

Aline Silva de Oliveira³
ORCID: <http://orcid.org/0000-0002-6986-8591>

Weslla Karla Albuquerque de Paula⁴
ORCID: <http://orcid.org/0000-0002-0237-2663>

Joana Lidyanne Bezerra⁵
ORCID: <http://orcid.org/0000-0003-0594-2702>

^{1,2,3,4}Federal University of Pernambuco/UFPE. Recife (PE), Brasil.

⁵Clinical Hospital of the Federal University of Pernambuco/UFPE. Recife (PE), Brasil.

Section Editor:
Valesca Patriota de Souza

Scientific Editor:
Tatiane Gomes Guedes

Managing Editor:
Maria Wanderleya de Lavor
Coriolano Marinus

Submission: 03/25/2023
Accepted: 02/19/2024
Published: 09/05/2024

ABSTRACT

Objective: to assess the functional health literacy (FHL) of mothers of premature newborns in a Neonatal Unit. **Method:** a cross-sectional, quantitative study, carried out in a Neonatal Unit in Pernambuco between June and October 2021. Sample selection occurred by convenience, including 57 mothers of premature newborns, literate, with self-declared reading and writing skills. For data analysis, frequency distribution calculation and central tendency measures were used. Bivariate analysis was performed using Pearson's chi-square test or Fisher's exact test. **Results:** the majority of participants had adequate literacy, which was associated with higher education (p-value=0.022), family income (≥ 1 minimum wage; p-value=0.047) and place of hospitalization of newborns (Kangaroo Neonatal Intermediate Care Unit; p-value= 0.035). **Conclusion:** the FHL of mothers of premature babies was superior to that of other Brazilian studies, however the association between low education, income and inadequate literacy supports the literature.

Descriptors: Health Literacy; Mothers; Infant, Premature; Intensive Care Units, Neonatal; Health Promotion; Neonatology.

RESUMO

Objetivo: avaliar o letramento funcional em saúde (LFS) de mães de recém-nascidos prematuros em uma Unidade Neonatal. **Método:** estudo transversal, quantitativo, realizado em uma Unidade Neonatal de Pernambuco entre junho e outubro de 2021. Seleção da amostra ocorreu por conveniência, incluindo-se 57 mães de recém-nascidos prematuros, alfabetizadas, com habilidade de leitura e escrita autodeclarada. Para análise dos dados, utilizou-se cálculo de distribuição de frequência e de medidas de tendência central. A análise bivariada foi realizada pelo teste qui-quadrado de Pearson ou teste exato de Fisher. **Resultados:** a maioria das participantes apresentou letramento adequado, que esteve associado à maior escolaridade (p-valor=0,022), renda familiar (≥ 1 salário mínimo; p-valor=0,047) e local de internamento do recém-nascido (Unidade de Cuidados Intermediários Neonatal Canguru; p-valor= 0,035). **Conclusão:** o LFS de mães de prematuros mostrou-se superior ao de outros estudos brasileiros, contudo a associação entre baixa escolaridade, renda e letramento inadequado corrobora a literatura.

Descritores: Letramento em Saúde; Mães; Recém-Nascido Prematuro; Unidades de Terapia Intensiva Neonatal; Promoção da Saúde; Neonatologia.

HOW TO CITE THIS ARTICLE:

Souza GKT, Lima, APE, Oliveira AS, Paula, WKA, Bezerra JL. Functional health literacy of mothers of premature newborns admitted to a neonatal unit. J.Nurs. UFPE on line. 2024;18:e257957 DOI: <https://doi.org/10.5205/1981-8963.2024.257957>

INTRODUCTION

Functional health literacy (FHL) concerns a field within health promotion that integrates two major areas of knowledge: health and education. FHL is defined as the level of understanding of information necessary to make decisions in the field of health, contributing to the maintenance and improvement of quality of life.¹⁻³ It refers to a set of skills that includes reading, understanding and acting on health information.²

Even if individuals have the ability to write and read, they may have difficulty understanding and interpreting the information given to them by healthcare professionals. Thus, FHL demands access, understanding and assessment so that it is possible to obtain, understand, interpret, filter and use information in the field of health.³

Considering the relationship between FHL and the population's quality of life, the World Health Organization (WHO), through the Commission on Social Determinants of Health, identified literacy as one of the social determinants of health, being fundamental to human self-care, as individuals with satisfactory FHL tend to have better health conditions.²

Studies carried out in Brazil on adults and older adults with chronic comorbidities reveal a low level of FHL in the population. Research on this topic focused on the Brazilian neonatal population, specifically mothers of premature newborns (NBs), is scarce, although this group requires complex and continuous care.^{4,5} On the other hand, international studies reveal insufficient FHL in mothers of premature NBs admitted to neonatal units.⁶⁻⁷

In developing countries, prematurity is considered a public health problem, due to the high rate of infant morbidity and mortality, since premature babies require specialized care for their survival, which becomes a challenge for the team, parents and the NB itself.⁸

Annually, around 340 thousand premature births are recorded in Brazil, placing the country in tenth position among the nations where the most cases of prematurity are recorded. Although actions aimed at ensuring adequate and humanized practices in neonatal intensive care are implemented, prematurity is linked to long periods of hospitalization, which bring potential biological and social risks to NBs and their family.⁹⁻¹⁰ Considering that comprehensive care for premature NBs is complex and involves not only the assistance provided by healthcare professionals in the hospital setting, but also home care by parents and family, it is necessary for them to develop sufficient skills and understanding to adequately carry out care, prevent injuries and promote health.^{9,11}

Therefore, this research sought to answer the following question: what is the health literacy situation of mothers of premature babies admitted to a Neonatal Unit (NNU)?

OBJECTIVE

This study aimed to assess the FHL of mothers of premature NBs admitted to an NNU.

METHOD

This is a cross-sectional, quantitative study, carried out between June and October 2021 at the NNU of a university hospital in Recife, Pernambuco. The NNU is made up of eight beds in the Neonatal Intensive Care Unit (NICU), ten beds in the Conventional Neonatal Intermediate Care Unit (UCINCo) and five beds in the Kangaroo Neonatal Intermediate Care Unit (UCINCa).¹²

The population consisted of mothers of premature NBs admitted to the NNU with convenience sample selection. The sample was calculated based on the number of NBs admitted in the first quarter of 2020 (72), considering the significance level of 95%, the margin of error in the estimate of 5% and the expected prevalence of 50% for the number of mothers of premature babies with inadequate FHL, with a representative sample size of 61 mothers.

Mothers of NBs with a gestational age of less than 37 weeks, literate and who reported having reading and writing skills were included. Mothers who were not accompanying their NB during their stay at NNU, children under 18 years old, without a guardian and those who reported using medication that compromises cognition or who had a disability that limited using the data collection instrument were excluded. During the collection period, 67 mothers were approached, however three were minors without a guardian; one had visual impairment; one was not literate; three were not accompanying their NB at NNU; and two refused to participate in the research. Thus, 57 participants were included in the study.

Participants were recruited at NNU, the obstetric center and mothers' accommodation. The study was presented verbally to participants. After agreement, the Informed Consent Form (ICF) was signed.

Data were collected through consultation of medical records (variables relating to NB's health conditions) and through an individual, in-person interview, with the help of a digital form, prepared by Google Forms®, filled out by the interviewer (socioeconomic and obstetric variables). To measure FHL, we chose to use the Brazilian version of the Test of Functional Health Literacy in Adults - Short version (S-TOFHLA), completed by mothers in a maximum time of 12 minutes.

S-THOFLA is composed of two stages: text comprehension and numeracy. The first stage, text comprehension, consists of sentences about preparing for a routine gastrointestinal health examination (stomach X-ray), rights and responsibilities in relation to the healthcare system and making decisions about one's own health. These sentences contain 12 questions, with 36 gaps, in which participants must choose, among four words, an alternative that gives meaning to the sentence, with only one possible answer. This stage should be completed in seven minutes.¹³

Numeracy issues involve attention and calculation, such as medication taking times, the results of a laboratory blood glucose test, as well as medication dosage and scheduling an appointment, which should be completed in ten minutes. However, the examinee was not warned about this time and, upon reaching the determined period, the test was collected. For the overall test score, each correct answer in text comprehension is equivalent to two points and, for the numeracy subtest, seven points, totaling 100 points. Scores from zero to 53 points indicate inadequate FHL; between 54 and 66 points, borderline; and between 67 and 100 points, adequate.¹³

The data consolidated by Google Forms® were exported to Microsoft Excel® and, later, to the IBM Statistical Package for the Social Sciences (SPSS Inc., Chicago, United States) version 26.0 for statistical analysis, using descriptive statistics, with frequency calculations absolute and relative and measures of central tendency and dispersion.

Furthermore, inferential analysis was carried out considering FHL as dependent variable, and socioeconomic data, obstetric data and health conditions of NBs as independent variables. The association was verified using Pearson's chi-square test or Fisher's exact test, the latter being chosen in cases where the number of cells with a frequency of less than five was above 20%. The significance level adopted for all tests was 5% (p-value).

The study was carried out in accordance with Resolution 466/12 of the Brazilian National Health Council, which deals with research involving human beings, submitted and approved by the Research Ethics Committee of the *Hospital das Clínicas* at the *Universidade Federal de Pernambuco*, under Opinion 4,711,116 and CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 42463821.0.0000.8807.

RESULTS

Regarding participant sociodemographic information, a mean age of 28.28 years (SD $\pm$ 7.12 years) was observed, with a predominance of the age group of up to 28 years (n=30;

52.6%), originating from the countryside (n=25; 43.9%), living in urban areas (n=34; 59.6%) and in their own residence (n=40; 70.2%). The majority declared themselves brown (n=33; 57.9%), was married or lived with a partner (n=42; 73.7%), had completed high school (n=28; 49.1%), did not receive government benefit (n=36; 63.2%) and had income < 1 minimum wage (n=28; 49.1%).

As for obstetric data, there was an average number of pregnancies of 2.43 (SD $\pm$ 1.53), of births, 1.96 (SD $\pm$ 1.30), of abortions, 0.61 (SD $\pm$ 1.01), and of living children, 1.75 (SD $\pm$ 1.53). All interviewees underwent prenatal care (n=57; 100.0%), and the majority attended five to eight consultations (n=23; 40.4%), used corticosteroids during pregnancy (n=44; 77.2%), had a vaginal childbirth (n=32; 56.1%) and did not have twin pregnancies (n=51; 89.5%).

In neonatal variables, a predominance of females (n=32; 56.1%), late prematurity (n=22; 38.6%) and low birth weight (n=28; 49.1%) was identified. At the time of data collection, the majority was exclusively breastfeeding (n=32; 56.1%) and fed through an orogastric tube (n=53; 93.0%), admitted to the Intensive Care Unit (n= 26; 45.6%) and with a hospitalization period of up to seven days (n=42, 73.7%) (Table 1).

Table 1. Characterization of premature newborns. Recife (PE), Brazil, 2021 (n=57).

Variables	n	%
Newborn sex		
Female	32	56.1
Male	25	43.9
Newborn classification		
Extremely premature (<28 weeks)	4	7.0
Very preterm (28 to 32 weeks)	17	29.8
Moderate preterm (32 to <37 weeks)	14	24.6
Late preterm (34 to <37 weeks)	22	38.6
Birth weight		
Low birth weight (<2,500g)	28	49.1
Very low birth weight (<1,500g)	8	14.0
Extremely low birth weight (<1,000g)	5	8.8
Newborn classification according to weight		
Small for gestational age	2	3.5
Adequate for gestational age	53	93.0
Large for gestational age	2	3.5
Neonatal diagnosis^a		
Sepsis	10	17.5
Hypoxia	11	19.3
Jaundice	28	49.1
Respiratory distress syndrome	9	15.8
Ventilatory support		
Ambient air	31	54.4
CPAP ^b	15	26.3
Non-invasive mechanical ventilation	3	5.3
Invasive mechanical ventilation - OTT ^c	8	14.0
Variables	n	%
Probes		

Orogastric	53	93.0
Nasogastric	3	5.3
Without probe	1	1.8
Breastfeeding		
Yes	49	86.0
No	8	14.0
Type of breastfeeding		
Exclusive breastfeeding	32	56.1
Breastfeeding or breastmilk substitutes	23	40.4
Place of hospitalization		
Intensive Care Unit	26	45.6
Conventional Neonatal Intermediate Care Unit	25	43.9
Kangaroo Neonatal Intermediate Care Unit	6	10.5
Length hospitalization		
Up to seven days	42	73.7
Above seven days	15	26.3

Caption: ^an greater than 57 (multiple responses); ^bCPAP: Continuous Positive Airway Pressure; ^cOTT: orotracheal tube.

Concerning FHL classification, it was found that the majority of mothers had an adequate FHL (n=30; 52.6%). With regard to text comprehension, 52.6% of participants scored between 28 and 36 questions and, regarding numeracy, 59.6% scored card 3, which refers to consultation scheduling (Table 2).

Table 2. Functional health literacy of mothers of premature babies. Recife (PE), Brazil, 2021 (n=57).

Variables	n	%
Functional health literacy		
Adequate (67 to 100 points)	30	52.6
Borderline (54 to 66 points)	10	17.5
Inadequate (0 to 53 points)	17	29.8
Correct alternatives in text comprehension		
0-18	17	29.8
28-36	30	52.6
Numeracy*		
Interval of use between medications	40	29.8
Glycemic values	31	54.4
Appointment scheduling	34	59.6
Guidance for medication use	32	56.1

Caption: *Several answers.

When crossing sociodemographic data with FHL, a statistically significant association was observed between the level of education (p-value=0.022) and family income (p-value=0.047) variables, showing that adequate FHL is associated with greater education and income levels (Table 3).

Table 3. Functional health literacy of mothers of premature babies according to sociodemographic and obstetric data. Recife (PE) Brazil, 2021 (n=57).

Variables	Functional health literacy		p-value
	Adequate n (%)	Borderline or inadequate n (%)	
Age			
Up to 28 years	17 (56.7)	13 (43.3)	0.520*
Above 28 years	13 (48.1)	14 (51.9)	
Origin			
Countryside	13 (52.0)	12 (48.0)	0.933*
Metropolitan Region	17 (53.1)	15 (46.9)	
Area			
Urban	18 (52.9)	16 (47.1)	0.955*
Rural	12 (52.2)	11 (47.8)	
Residence			
Own	22 (55.0)	18 (45.0)	0.583*
Rented/loaned	8 (47.1)	9 (52.9)	
Race			
White	9 (64.3)	5 (35.7)	0.528**
Balack	5 (55.6)	4 (44.4)	
Brown	15 (45.5)	18 (54.5)	
Marital status			
Single	5 (38.5)	8 (61.5)	0.600**
Married/partner	24 (57.1)	18 (42.8)	
Split/divorced	1 (50.0)	1 (50.0)	
Education			
< 8 years	5 (29.4)	12 (70.6)	0.022*
≥ 8 years	25 (62.5)	15 (37.5)	
Receives government benefit			
Yes	8 (38.1)	13 (61.9)	0.093*
No	22 (61.1)	14 (38.9)	
Family monthly income			
<1 minimum wage	11 (39.3)	17 (60.7)	0.047*
≥ 1 minimum wage	11 (73.3)	4 (26.7)	
Number of prenatal consultations			
< 5 consultations	8 (50.0)	8 (50.0)	0.804*
≥ 5 consultations	22 (53.6)	19 (46.4)	

Caption: *Pearson's chi-square test; **Fisher's exact test.

In relation to the relationship between neonatal data assessed and FHL, it was found that there was no significant association between variables. In turn, when stratifying place of hospitalization with FHL, statistical significance was observed (p-value=0.035), with adequate FHL predominating among those admitted to UCINCa (Table 4).

Table 4. Functional health literacy of mothers of premature babies according to neonatal data. Recife (PE), Brazil, 2021 (n=57).

Variables	Functional health literacy		p-value
	Adequate N (%)	Borderline or inadequate n (%)	
Newborn classification			
Extremely preterm/very preterm (<28 weeks to <32 weeks)	11 (52.4)	10 (47.6)	

Moderate/late preterm (32 weeks to <37 weeks)	19 (52.8)	17 (47.2)	0.977*
Birth weight			
Low birth weight (< 2,500g)	27 (51.9)	25 (48.1)	1.000**
Adequate weight (≥ 2,500g)	3 (60.0)	2 (40.0)	
Newborn classification according to weight			
Small for gestational age	1 (50.0)	1 (50.0)	1.000**
Adequate for gestational age	28 (52.8)	25 (47.2)	
Large for gestational age	1 (50.0)	1 (50.0)	
Ventilatory support			
Ambient air	19 (61.3)	12 (38.7)	0.148**
Non-invasive mechanical ventilation	6 (33.3)	12 (66.7)	
Invasive mechanical ventilation	5 (62.5)	3 (37.5)	
Breastfeeding			
Yes	25 (51.0)	24 (49.0)	0.709**
No	5 (62.5)	3 (37.5)	
Exclusive breastfeeding			
Yes	17 (53.1)	15 (46.9)	0.933*
No	13 (52.0)	11 (48.0)	
Place of hospitalization			
Intensive Care Unit	9 (34.6)	17 (65.4)	0.035**
Conventional Neonatal Intermediate Care Unit	16 (64.0)	9 (36.0)	
Kangaroo Neonatal Intermediate Care Unit	5 (83.3)	1 (16.7)	

Caption: *Pearson's chi-square test; **Fisher's exact test.

DISCUSSION

Adequate FHL was the most prevalent among mothers; this result supports research carried out in Germany with adult mothers of NBs during hospital admission after childbirth.¹⁴

However, studies carried out in the Brazilian population with adults and elderly people of both sexes reveal predominantly inadequate FHL. Having an audience composed exclusively of women, in this study, may explain a higher FHL, since women are the main caregivers within families, frequently attending healthcare services, in addition to having communicative skills that favor the development of contact and support networks that enable more efficient care.^{2,3,15}

Studies carried out with mothers of premature NBs admitted to neonatal units in Iran indicate inadequate levels of FHL associated, respectively, with low social support and the absence of maternal health education based on feedback, noting that the level of maternal FHL plays an important role in the self-efficacy of neonatal care and in the prevention of conditions that can lead to recurrent hospitalization of NBs.⁶⁻⁷

Another factor that may have contributed to high levels of FHL in this population, although no statistical significance was found, concerns the younger age group of participants. Research carried out on older individuals shows that inadequate FHL is more

prevalent so that the older the age, the greater the proportion of individuals with low literacy. As age advances, the difficulty in processing information that requires reasoning increases, as the ability to perform cognitive activities decreases. On the other hand, older people have less education when compared to younger people, which may be related to the country's educational profile.^{3,16,17}

Furthermore, all study participants underwent prenatal care, with a predominance of five or more consultations. Although there was no statistical significance, this condition may also have potentiated FHL, since healthcare in prenatal consultations provides women and their families with adequate information about pregnancy, childbirth, NB care and breastfeeding.¹⁸

Most participants were able to understand the sentence completely and identify the word that completed the meaning in enough time. This result may be related to the level of education, since 49.1% had completed high school. Although FHL and formal education are different parameters, they can enhance the levels of adequate FHL in the population.¹⁵

In the numeracy stage, the question that obtained the most correct answers was related to consultation scheduling, whereas the lowest frequency was associated with the interval of use between medications, which may influence effective therapeutic management. A similar result was found in a study that used the same test to assess FHL, once again being associated with education, in which individuals with more years of formal study presented a higher percentage of correct answers in the test reading and numeracy questions.¹⁹

FHL was associated with family income and education so that the higher the family income and years of formal study, the greater the frequency of adequate FHL. Similar results were found in the study by Bezerra *et al.*⁸, in which individuals with low education and income presented inadequate FHL. Given that people with higher income have more alternative sources of knowledge, it may be more favorable to the level of education and processing of ideas.¹⁵

When relating the place of hospitalization of NBs to FHL, a significant association was observed with hospitalization at UCINCa, which is characterized by promoting humanized care and continuous stay of mothers with premature and low birth weight NBs.¹¹ Maternal perception of the experience at UCINCa reveals that the unit is a place of constant learning, as it allows adaptation of care and breastfeeding, in addition to strengthening the team's bond with the family through welcoming and dialogue with clear information about children's health status, thus being able to enhance mothers' FHL.²⁰⁻²¹

Research carried out in the United States with 253 parents of healthy NBs, mostly immigrant women, showed that parental self-efficacy was significantly lower in parents with low literacy, associated with primiparity, lack of support and support, and unsatisfactory preventive care, supporting the idea that health literacy and self-efficacy are bidirectionally associated with influence on care plan.²²

In this context, FHL is a priority tool in health actions, as individuals begin to obtain, understand and efficiently use information in the management of demands related to child health that are imposed on parents or guardians. The role of nursing in promoting individuals' health is emphasized, which, when considering the FHL of its target audience, can enhance its health education actions.^{14,23}

As a limitation of this study, the reduced sample size and the restriction on the participation of only one neonatal unit with a limited number of beds stand out, requiring larger-scale studies that are capable of portraying the level of FHL of healthcare service users in other neonatal units and, consequently, encourage discussion on this topic in healthcare environments.

CONCLUSION

It was observed that the majority of mothers of preterm NBs had adequate FHL, with a statistically significant association with higher education and family income as well as NB hospitalization in UCINCa. Furthermore, it was possible to identify that adequate FHL is directly related to better text comprehension, enabling greater adherence to the care plan and preventive measures necessary to maintain premature NBs' health.

Therefore, it is necessary to identify mothers with borderline or inadequate FHL, as they may have difficulty reading, understanding and applying child care, leaving them vulnerable to errors and abandonment of treatment. Actions aimed at promoting FHL in healthcare services are increasingly necessary, and dialogue between healthcare service professionals and users is essential in order to reduce therapeutic failures related to communication and insufficient understanding. On the other hand, it is essential to encourage and boost health education activities during prenatal care that can enhance adequate FHL in the population, ideal time to identify gestational risks, strengthen family bonds and provide guidance on NB care.

CONTRIBUTIONS

Gracielly Karine Tavares Souza: conception, study planning, data analysis and interpretation, writing and critical review. Ana Paula Esmeraldo Lima: conception, study

planning, data analysis and interpretation, writing and critical review. Aline Silva de Oliveira: study planning, writing and critical review. Weslla Karla de Albuquerque de Paula: study planning, writing and critical review. Joana Lidyanne Bezerra: study planning, writing and critical review.

CONFLICTS OF INTERESTS

Nothing to report.

FUNDING

Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES - *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*) – Financing Code 001 of the Dean of Graduate Studies at the *Universidade Federal de Pernambuco* (PROPG-UFPE) and the Pernambuco State Department of Health.

REFERENCES

1. Borges FM, Silva ARV, Lima LHO, Almeida PC, Vieira NFC, Machado ALG. Health literacy of adults with and without arterial hypertension. *Revista Brasileira de Enfermagem*. 2019;72(3):645-53. DOI: <https://doi.org/10.1590/0034-7167-2018-0366>.
2. Chehuen Neto JA, Costa LA, Estevanin GM, Bignoto TC, Vieira CIR, Pinto FAR, et al. Letramento funcional em saúde nos portadores de doenças cardiovasculares crônicas. *Ciência & Saúde Coletiva*. 2019;24(3):1121-1132. DOI: <https://doi.org/10.1590/1413-81232018243.02212017>.
3. Campos AAL, Neves FS, Saldanha RF, Duque KCD, Guerra MR, Leite ICG, et al. Fatores associados ao letramento funcional em saúde de mulheres atendidas pela Estratégia de Saúde da Família. *Caderno Saúde Coletiva* [online]. 2020;28(1):66-76. DOI: <https://doi.org/10.1590/1414-462X202000280295>.
4. Neves AB. Letramento funcional em saúde dos idosos acerca de acidentes por queda e sua prevenção [dissertação]. Belém: Universidade Federal do Pará; 2017. Disponível em: <https://revistas.pucsp.br/index.php/kairos/article/view/46918>
5. Maragno CAD, Mengue SS, Moraes CG, Rebelo MVD, Guimarães AMM, Pizzol TSD. Teste de letramento em saúde em português para adultos. *Revista Brasileira de Epidemiologia*. 2019;22:e.190025. DOI: <https://doi.org/10.1590/1980-549720190025>.
6. Alinejad-Naeini M, Razavi N, Sohrabi S, Heidari-Beni F. The association between health literacy, social support and self-efficacy in mothers of preterm neonates. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2019;34(11):1703-1710. DOI: <https://doi.org/10.1080/14767058.2019.164462>.
7. Amini N, Kashaki M, Rasoulo M, Borimnejad L. The effect of teach-back education on the health literacy level of mothers of premature neonates in the neonatal intensive care

unit. Journal of Critical Care Nursing. 2021;14(3):12-20. DOI: <https://dx.doi.org/10.221/JCC.14.3.12>

8. Klossowski DG, Godói VC, Xavier CR, Fujinaga CI. Assistência integral ao recém-nascido prematuro: implicações das práticas e da política pública. Revista Cefac. 2016;18(1):137-150. DOI: <https://doi.org/10.1590/1982-021620161814515>
9. Silva FVR, Gomes TO, Marta CB, Araujo MC, Braga ES. Preparo dos pais de recém-nascido pré-termo para alta hospitalar: proposta de um protocolo. Revista de Pesquisa Cuidado é Fundamental Online. 2020;12: 386-392. DOI: <http://dx.doi.org/10.9789/2175-5361.rpcfo.v12.8264>.
10. Ministério da Saúde (BR). Secretaria de Atenção Primária à Saúde. Semana da prematuridade movimenta profissionais de saúde e população pela prevenção de nascimentos prematuros. Brasília: Ministério da Saúde; 2020. Disponível em: Portal da Secretaria de Atenção Primária a Saúde (saude.gov.br).
11. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Atenção humanizada ao recém-nascido: Método Canguru: manual técnico. Brasília: Ministério da Saúde, 2017. Disponível em: https://www.gov.br/saude/pt-br/assuntos/saude-de-a-a-z/s/saude-da-crianca/publicacoes/atencao_humanizada_recem_nascido_canguru.pdf/view
12. Ministério da Educação (BR). Empresa Brasileira de Serviços Hospitalares - EBSEH. Unidade Neonatal promove curso de Atenção Humanizada. 2018. Disponível em: http://www2.ebserh.gov.br/pt/web/hc-ufpe/detalhes-das-noticias/-/asset_publisher/7d2qZuJcLDFo/content/id/3571795/2018-11-unidade-neonatal-promove-curso-de-atencao-humanizada-ao-recem-nascido.
13. Carthery-Goulart MT, Anghinah R, Areza-Fegyveres R, Bahia VS, Brucki SMD, Damin A, et al. Performance of a Brazilian population on the test of functional health literacy in adults. Revista de Saúde Pública [online]. 2009;43(4):631-638. DOI: <https://doi.org/10.1590/S0034-89102009005000031>.
14. Brandstetter S, Atzendorf J, Seelbach-Göbel B, Melter M, Kabesch M, Apfelbacher C; KUNO-Kids study group. Sociodemographic factors associated with health literacy in a large sample of mothers of newborn children: cross-sectional findings from the KUNO-Kids birth cohort study. European Journal of Pediatrics. 2020;179(1):165-169. DOI: <https://doi.org/10.1007/s00431-019-03483-9>.
15. Marques SRL, Lemos SMA. Letramento em saúde e fatores associados em adultos usuários da atenção primária. Trabalho, Educação e Saúde [online]. 2018;16(2): 535-559. DOI: <https://doi.org/10.1590/1981-7746-sol00109>.
16. Kobayashi LC, Wardle J, Wolf MS, von Wagner C. Aging and Functional Health Literacy: A Systematic Review and Meta-Analysis. The journals of gerontology: Series B, Psychological Sciences and Social Sciences. 2016;71(3):445-57. DOI: <https://doi.org/10.1093/geronb/gbu161>.
17. Almeida KMV. Avaliação do alfabetismo funcional em saúde em cuidadores de idosos [dissertação]. Botucatu: Universidade Estadual Paulista; 2017.

18. Guler DS, Sahin S, Ozdemir K, Unsal A, Uslu Yuvaci H. Health literacy and knowledge of antenatal care among pregnant women. *Health Soc Care Community*. 2021;29(6):1815-1823. DOI: <https://doi.org/doi: 10.1111/hsc.13291>.
19. Bezerra JNM, Lessa SRO, Ó MF, Luz GOA, Borba AKO. Health literacy of individuals undergoing dialysis therapy. *Texto & Contexto - Enfermagem* [online]. 2019;28:e.20170418. DOI: <https://doi.org/10.1590/1980-265X-TCE-2017-0418>.
20. Dantas JM, Leite HC, Querido DL, Esteves APVS, Almeida VS, Haase MMMC, et al. Percepção das mães sobre a aplicabilidade do método canguru. *Revista de Enfermagem UFPE on line*. 2018;12(11):2944-2951. DOI: <https://doi.org/10.5205/1981-8963-v12i11a235196p2944-2951-2018>.
21. Zirpoli DB, Mendes RB, Barreiro MSC, Reis TS, Menezes AF. Benefícios do método canguru: uma revisão integrativa. *Revista de Pesquisa Cuidado é Fundamental Online*. 2019;11(2, n. esp):547-554. DOI: <http://dx.doi.org/10.9789/2175-5361.2019.v11i2.547-554>.
22. Fong HF, Rothman EF, Garner A, Ghazarian SR, Morley DS, Singerman A, Bair-Merritt MH. Association Between Health Literacy and Parental Self-Efficacy among Parents of Newborn Children. *The Journal of Pediatrics*. 2018;202(3):265–271. DOI: <https://doi.org/10.1016/j.jpeds.2018.06.021>.
23. Pavão ALB, Werneck GL. Literacia para a saúde em países de renda baixa ou média: uma revisão sistemática. *Ciência & Saúde Coletiva*. 2021;26(9):4101-4114. DOI: <https://doi.org/10.1590/1413-81232021269.05782020>.

Correspondence

Gracielly Karine Tavares Souza
Email: gracielly.karine@ufpe.br

Copyright© 2024 Revista de Enfermagem UFPE on line/REUOL.

 Este é um artigo de acesso aberto distribuído sob a Atribuição CC BY 4.0 [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by/4.0/), a qual permite que outros distribuam, remixem, adaptem e criem a partir do seu trabalho, mesmo para fins comerciais, desde que lhe atribuam o devido crédito pela criação original. É recomendada para maximizar a disseminação e uso dos materiais licenciados.