

# Social determinants of health and self-efficacy of mothers/caregivers for preventing diarrhea

Determinantes sociais de saúde e autoeficácia de mães/cuidadores para prevenção da diarreia  
Determinantes sociales de salud y autoeficacia de madres/cuidadores para prevención de diarrea

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Diarreia infantil; Determinantes sociais da saúde; Autoeficácia; Promoção da saúde; Prevenção de doenças

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## Abstract

**Objective:** To verify the association between the social determinants of health and the levels of self-efficacy of mothers or caregivers to prevent childhood diarrhea.

**Methods:** This is a cross-sectional study carried out with 363 mothers or caregivers of children under five years old, followed up in a Primary Health Care unit. For data collection, the sociodemographic characterization form and the Maternal Self-Efficacy Questionnaire for Prevention of Infantile diarrhea. The Chi-Square test was performed, and as a measure of association, odds ratio.

**Results:** It was found that mothers or caregivers aged 15 to 29 years were 1.6 times more likely to have moderate self-efficacy, with statistical significance for the individual determinant "age group" ( $p=0.017$ ). Participants with inadequate intermediate determinants "waste destination" and "home water source" were 3.5 and 2.8 times more likely to have moderate self-efficacy, respectively.

**Conclusion:** The social determinant of health "age group" increases the chance of mothers or caregivers showing moderate self-efficacy to prevent childhood diarrhea. Therefore, nurses should place a greater emphasis on guiding mothers or caregivers, especially younger ones, on the prevention of diarrhea and carrying out educational actions aimed at increasing their self-efficacy.

## Resumo

**Objetivo:** Verificar associação entre os determinantes sociais de saúde e os níveis de autoeficácia de mães ou cuidadores para prevenção da diarreia infantil.

**Métodos:** Estudo transversal realizado com 363 mães ou cuidadores de crianças menores de cinco anos, acompanhadas em unidade de Atenção Primária à Saúde. Para coleta de dados, utilizaram-se o formulário de caracterização sociodemográfica e a Escala de Autoeficácia Materna para Prevenção da Diarreia Infantil. Realizou-se o teste Qui-Quadrado e como medida de associação a razão de chances.

**Resultados:** Verificou-se que mães ou cuidadores com idades de 15 a 29 anos tiveram 1,6 vezes mais chances de apresentarem autoeficácia moderada, com significância estatística para o determinante individual "faixa etária" ( $p=0,017$ ). Os participantes com determinantes intermediários "destino do lixo" e "origem da água do domicílio" inadequados tiveram, respectivamente, 3,5 e 2,8 vezes mais chances de apresentarem autoeficácia moderada.

**Conclusão:** O Determinante Social de Saúde "faixa etária" aumenta a chance de mães ou cuidadores apresentarem autoeficácia moderada para prevenção da diarreia infantil. Portanto, cabe aos enfermeiros uma maior ênfase em orientar as mães ou cuidadores, principalmente os mais jovens sobre a prevenção da diarreia e realizar ações educativas que visem aumentar a autoeficácia destes.

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Conflicts of interest: nothing to declare.

## Resumen

**Objetivo:** Verificar la relación entre los determinantes sociales de salud y los niveles de autoeficacia de madres o cuidadores para la prevención de diarrea infantil.

**Métodos:** Estudio transversal realizado con 363 madres o cuidadores de niños menores de cinco años, atendidas en una unidad de Atención Primaria de Salud. Para la recopilación de datos se utilizó el formulario de caracterización sociodemográfica y la Escala de Autoeficacia Materna para la Prevención de la Diarrea Infantil. Se realizó la prueba  $\chi^2$  de Pearson y, como medida de asociación, la razón de momios.

**Resultados:** Se verificó que las madres o cuidadores con edad de 15 a 29 años tuvieron 1,6 veces más chances de presentar autoeficacia moderada, con significación estadística del determinante individual "grupo de edad" ( $p=0,017$ ). Los participantes con determinantes intermedios "destino de la basura" y "origen del agua del domicilio" inadecuados tuvieron más probabilidades de presentar autoeficacia moderada, 3,5 y 2,8 respectivamente.

**Conclusión:** El determinante social de salud "grupo de edad" aumenta la probabilidad de que madres o cuidadores presenten autoeficacia moderada para la prevención de la diarrea infantil. Por lo tanto, corresponde a los enfermeros hacer hincapié en orientar a las madres o cuidadores, principalmente los más jóvenes, sobre la prevención de la diarrea y realizar acciones educativas con el objetivo de aumentar su autoeficacia.

## Introduction

Diarrhea remains the second leading cause of death in the child population, although it is possible to prevent and treat it. Globally, about 525,000 deaths of children under five are recorded each year, with a high prevalence, especially in less developed countries.<sup>(1)</sup>

In Brazil, during 2019, 46,816 cases of diarrhea were recorded in children under five years old.<sup>(2)</sup> Between January and July 2020, 16,857 hospitalizations for diarrhea occurred in the same age group.<sup>(3)</sup> In 2018, in the Northeast, 151 deaths of children under 4 years old were recorded, 21 of whom were from Ceará State.<sup>(3,4)</sup> In the same state, in 2019, there were 2,329 cases of diarrhea in children under 4 years old.<sup>(4,5)</sup>

Diarrhea can be related to multiple environmental, socioeconomic and cultural factors, i.e., social determinants of health (SDH),<sup>(6)</sup> which covers the living and working conditions of individuals and population groups, as well as behaviors in relation to health care.<sup>(7,8)</sup>

In Brazil, the Brazilian National Commission on Social Determinants of Health adopted the Dalgren and Whitehead model to guide the organization of its activities, as it is considered simple and easy to view, organized in concentric circles, centered on individuals, surrounded by five tiers. The first tier is represented by the individual determinants; the second is represented by individual proximal, behaviors and lifestyles; the third is represented by social networks; the fourth is known as intermediaries, as is the case with living and working conditions; and, finally, the tier of distal or macro determinants

comprises the society's economic, cultural and environmental conditions.<sup>(9)</sup>

Although it is recognized that SDH can influence the occurrence of diarrhea, it is believed that mothers or caregivers with high self-efficacy can minimize this problem in childhood, because according to Bandura,<sup>(10)</sup> individuals with high self-efficacy have individual beliefs about the ability to organize and take a certain action to achieve a successful result. In this sense, a study carried out in Fortaleza showed that children whose mothers or caregivers had high self-efficacy were less likely to have diarrhea.<sup>(11)</sup>

In the Brazilian National Agenda of Health Research Priorities (*Agenda Nacional de Prioridades de Pesquisa em Saúde*), primary and secondary prevention of childhood diarrhea is one of the highlighted themes.<sup>(12)</sup> It is known that in low-income countries children under the age of three are affected by, on average, three episodes of diarrhea per year. This fact has numerous implications for children's health, including the lack of sufficient nutrition for expected growth, which contributes to low immunity and greater illness in this public.<sup>(1)</sup>

Therefore, understanding the relationship between SDH and maternal self-efficacy in preventing childhood diarrhea may provide subsidies and indicators for carrying out actions that promote healthy maternal behaviors, in addition to guiding public policies that minimize health inequities and, consequently, diarrhea morbidity and mortality. Thus, this study aimed to verify the association between SDH and maternal self-efficacy levels for preventing childhood diarrhea.

## Methods

This is a descriptive, cross-sectional study, carried out based on the association of SDH with the self-efficacy of mothers or caregivers of children under five years old, conducted in two Primary Health Care Units (PHCU) in the city of Fortaleza, Ceará, Brazil. Fortaleza is divided into eight Regional Offices (RO); however, for this study, V RO was selected, which has a low human development index (HDI), ranging from 0.135 to 0.395 and the highest occurrence of diarrhea in children under five years old.<sup>(5)</sup> The two units were selected by means of simple random drawing. It is noteworthy, although the description of this study was followed by the recommendations of the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE).

The probabilistic sample was representative, being determined based on the calculation of the finite population,<sup>(13)</sup> adopting a prevalence equal to 50%, a sampling error of 5% and a confidence coefficient of 95%, accounting for a sample of size “n” equal 363 mothers or caregivers of children under five. Despite this, some variables are no longer answered by some participants, resulting in unequal absolute numbers in the treatment of these data.

To obtain the sample, mothers or caregivers of children under five years old, followed up in a Primary Health Care Unit (PHCU), were included. Mothers or caregivers who had communication barriers due to cognitive limitations, as evidenced by a medical diagnosis that prevented them from responding to the instruments used for data collection, were excluded; and those who cared for a child with a medical diagnosis of lactose intolerance, allergy to cow's milk protein or any other disease that has diarrhea as a symptom.

Data collection took place from June to October 2015. Mothers or caregivers were individually invited to participate in the study when they were waiting for assistance at PHCU, being presented with the objectives of the study, the detailed guidelines for their participation, and the ethical issues surrounding research with human beings. Formal consent was obtained by signing the Informed Consent Form.

Then they were directed to a reserved room, to conduct an interview using two instruments. Each instrument took an average of 15 to 20 minutes to be answered. The first instrument used was based on the SDH model,<sup>(8)</sup> with the following variables: tier 1 (individual determinants) - age group of mother or caregiver; tier 2 (proximal determinants) - marital status, education; tier 3 (influence of social networks) - number of people in the household, occupation, number of children; tier 4 (intermediate determinants) - family income, number of children, type of house, type of floor, waste destination, source of water at home, type of toilet, sewage network, help with child care and exclusive breastfeeding.

The second instrument was the Maternal Self-efficacy Scale for Preventing Early Childhood Diarrhea (EAPDI - *Escala de Autoeficácia Para Prevenir A Diarreia Infantil*), developed in Brazil, with validity and proven reliability,<sup>(14)</sup> presenting 24 items, with the following domains: family hygiene, with 15 items and dietary practices/general, with nine items. The scale is of a Likert type, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). The identification of levels of self-efficacy occurs from the sum of the scores, which can vary from 24 to 120 points, considering a score equal to or greater than 115 points as high maternal self-efficacy to prevent childhood diarrhea, and 114 or less points representing moderate self-efficacy.<sup>(11)</sup>

The data obtained were organized in a Microsoft Excel spreadsheet, through double typing and later validation, and exported to the Statistical Package for Science Social (SPSS) software, version 20.0, under license 10101131007. To present and analyze the results, descriptive statistics were used to calculate the frequency, in absolute numbers and percentages. The data were presented in cross tables. An association was made between SDH and maternal self-efficacy for preventing childhood diarrhea, using the chi-square test, and the strength of the associations was measured by the Odds Ratio (OR) and the respective 95% confidence interval. For these analyzes, the significance level was set at 5%. Then, the multivariate analysis of logistic regression was performed.

The study considered all the ethical precepts of Resolution 466/2012 and COFEN Resolution 311/2007, being approved by the Research Ethics Committee (REC) of *Universidade Federal do Ceará*, Brazil, according to number 1,116,855.

## Results

The data presented in Table 1 were divided according to individual, proximal tiers, influence of social and intermediary networks of mothers or children's caregivers.

It was observed that, in the tier of individual determinants, the maternal age group was concentrated from 15 to 29 years (57%; n=209). In the tier of proximal determinants, it was found that the vast majority of mothers or caregivers had a partner in a stable relationship (79%; n=284); of these, 167 (59%) had moderate self-efficacy, and half had more than eight years of study (51%; n=186). In an analysis of the influence tier of social networks, it was evidenced that the vast majority were housewives and did not perform extra-household activities (66%; n=237), with four or more people residing in the same house (68%; n=246), and most had more than three children (88%; n=319).

As for the intermediate determinant tier, half of the mothers or caregivers had a family income of one minimum wage (50%; n=172), lived in a brick house with plaster (88%; n=318); water consumption from the public network (99%; n=357), flush toilets (83%; n=293) and more than half did not have a sewer network (60%; n=218) predominated. Regarding children's health, it was identified that 92% (n=332) had no disease and just over half (51%; n=181) of the children were breastfed for less than six months. Furthermore, more than half (58%; n=208) of mothers or caregivers received help from third parties to care for their children.

It was found that 213 (58.6%) of mothers or caregivers had moderate self-efficacy, and 150 (41.3%) of them, high self-efficacy, with an average of 113 scores in the sum of EAPDI.

It was found, in an analysis of the association between maternal self-efficacy in preventing child-

hood diarrhea and individual SDH, statistical significance with the variable maternal age group ( $p = 0.017$ ), demonstrating that mothers or caregivers aged between 15 and 29 years had 1.6 times more likely to have moderate self-efficacy to prevent childhood diarrhea.

When associating maternal self-efficacy in preventing childhood diarrhea with proximal SDH (marital status and education), no statistical significance was found between SDH and the influence of social networks (the number of people in the household, the number of children and occupation) and chances of having moderate self-efficacy.

Regarding intermediate SDHs, mothers or caregivers destined for waste not carried out by public collection and source of water in the household that does not come from the public network had, respectively, 3.5 and 2.8 times more likely to have moderate self-efficacy to prevent diarrhea in children.

**Table 1.** Association between social determinants of health and the level of maternal self-efficacy in preventing childhood diarrhea of mothers or caregivers of children under five years old

SDH	Maternal self-efficacy		OR (95%CI)	p-value**
	Moderate n(%)	High n(%)		
Individuals				
Age group of mothers or caregivers (years) (n=363)				0.017
15 - 29	133(63.6)	76(36.4)	1.6 (1.0-2.4)	
30 - 55	80(51.9)	74(48.1)		
Proximal determinants				
Marital status (n=360)				0.529
Single	45(59.2)	31(40.8)	1.0 (0.6-1.7)	
Married	167(58.8)	117(41.2)		
Education (n=362)				0.369
≤ 8	101(57.4)	75(42.6)	0.9 (0.5-1.3)	
>8	111(59.7)	75(40.3)		
Influence of social networks				
Numbers of people in the household (n=359)				0.527
From 4 or more	143(58.1)	103(41.9)	0.9 (0.6-1.5)	
≤ 3	66(58.4)	47(41.6)		
Occupation (n=357)				0.184
Other	66(55.0)	54(45.0)	0.7 (0.5-1.2)	
Housewife	144(60.6)	93(39.4)		
Number of children (n=361)				0.540
>3	188(58.9)	131(41.1)	0.9 (0.5-1.8)	
≤ 3	25(59.5)	17(40.5)		
Intermediary				
Family income (minimum wage)* (n=343)				0.270
Up to 1.0	104(60.8)	67(39.2)	1.1 (0.7-1.8)	
2 or more	98(57.0)	74(43.0)		

Continue...



Continuation.

SDH	Maternal self-efficacy			p-value**
	Moderate n(%)	High n(%)	OR (95%CI)	
Child's sex (n=363)				0.246
Male	106(56.7)	81(43.3)	0.8 (0.5-1.2)	
Female	107(60.8)	69(39.2)		
Child studies (n=357)				0.491
Yes	67(57.8)	49(42.2)	0.9 (0.6-1.5)	
No	141(58.5)	100(41.5)		
Type of house (plastering) (n=362)				0.337
Without	24(54.5)	20(45.5)	0.8 (0.4-1.5)	
With	188(59.1)	130(40.9)		
Floor type (n=362)				0.190
Cement	94(61.8)	58(38.2)	1.2 (0.8-1.8)	
Ceramic	119(56.7)	91(43.3)		
Waste destination (n=362)				0.193
Others	5(83.3)	1(16.7)	3.5 (0.4-30.7)	
Collection	208(58.4)	148(41.6)		
Household water origin (n=362)				0.316
Others	4(80.0)	1(20.0)	2.8 (0.3-25.5)	
Public network	209(58.5)	148(41.5)		
Type of toilet (flushing) (n=354)				0.302
Without	38(62.3)	23(37.7)	1.2 (0.6-2.1)	
With	169(57.7)	124(42.3)		
Sewage network (n=361)				0.373
Yes	130(59.6)	88(40.4)	1.0 (0.7-1.6)	
No	82(57.3)	61(42.7)		
Receive help to care for children (n=361)				0.445
Yes	121(58.2)	87(41.8)	0.9 (0.6-1.4)	
No	91(59.5)	62(40.5)		
Child has some illness (n=360)				0.447
Yes	17(60.7)	11(39.3)	1.1 (0.5-2.4)	
No	193(58.1)	139(41.9)		
Exclusive breastfeeding (n=356)				0.108
< 6 months	112(61.9)	69(38.1)	1.3 (0.8-2.0)	
6 months or more	96(54.9)	79(45.1)		

\*Minimum wage amount at the time of data collection: US\$160; \*\*p-value. Fisher's exact test and likelihood ratio.

## Discussion

The SDHs influence the health-disease process, differently, each of the social groups; therefore, there are individuals in more vulnerable conditions.<sup>(15)</sup> Therefore, it is necessary to understand the socio-economic context and the environmental conditions in which people live, in addition to social and cultural customs for planning interventions.<sup>(16)</sup>

Moreover, self-efficacy must also be considered, since it is a potential predictor for health-promoting behaviors, which can enhance or limit maternal care for children,<sup>(16)</sup> in addition to contributing to the prevention and control of childhood diarrhea, as mothers with adequate knowledge and high self-efficacy are more likely to practice daily care for

their children.<sup>(14)</sup> Thus, it is opportune to identify SDH that can influence maternal self-efficacy, and, therefore, implement strategies that work to raise this aspect.<sup>(17)</sup>

According to the Dahlgreen and Whithead (2007) model, individual and non-modifiable determinants, such as age, sex and genetic factors, influence health conditions.<sup>(8)</sup> In this study, there was a higher prevalence of mothers or caregivers between 15 and 29 years old, who were more likely to have moderate self-efficacy, to the detriment of high self-efficacy. Corroborating these data, a study developed in Fortaleza-CE, with mothers of children under five years old, showed that this variable can influence the levels of self-efficacy that mothers have, above all, in the prevention of diarrhea. Accordingly, research carried out in Indonesia, also, showed that maternal age was statistically associated with the occurrence of diarrhea in children.<sup>(18)</sup> Thus, it is believed that older age makes caregivers more experienced, being able to improve children's hygiene and feeding practices, and, consequently, feel more confident to prevent diarrhea.

With regard to the proximal SDHs that correspond to the modifiable ones, such as individual behavior and lifestyles, it was observed that most mothers or caregivers had a partner maintaining a stable relationship, and half had more than eight years of study. Similar to these findings, a study carried out in Indonesia identified a statistically significant association between maternal education and the occurrence of diarrhea, so that mothers with low education can limit knowledge about the prevention of diarrheal diseases, constituting a risk factor for the children's illness.<sup>(19)</sup>

A cross-sectional study, carried out in Bankura, India, with 76 mothers of children under five, found that the higher the maternal level of education, the better the knowledge related to the management of childhood diarrhea.<sup>(20)</sup> Although there was no significance in the association between marital status and education with maternal self-efficacy, a longitudinal study, carried out in Fortaleza, with 90 mothers of children under five years old, proved that marital status and education were significant

with the levels of maternal self-efficacy to prevent childhood diarrhea.<sup>(21)</sup>

In relation to the influence of social networks SDH (occupation, number of people in the household and number of children), which demonstrates that the level of social cohesion is relevant to the health of the population,<sup>(8)</sup> there was a prevalence of mothers or caring caregivers home, with four or more people living in the same household, and the majority had more than three children. Although no significant association was identified in the present study on maternal occupation and self-efficacy, a research carried out in Peru identified that the fact that mothers do extra-family work could harm child care, as they had less time available to children.<sup>(22)</sup> In contrast, an investigation carried out in Fortaleza found that working mothers felt more capable of taking care in the management and prevention of childhood diarrhea.<sup>(11)</sup> Given this, it is believed that mothers' occupation can influence their self-confidence in preventing diarrhea.

Regarding the number of people in the same residence, a study carried out in Pakistan pointed out that environments with clusters of people are more likely to have geohelminthiasis; therefore, children who share the same room with more than three people were at greater risk of developing diarrhea.<sup>(23)</sup> Furthermore, research in Senegal certified that the presence of two or more children under five years old who live in the same household was related to the occurrence of diarrhea.<sup>(24)</sup>

Regarding the SDH referring to the number of children, it is highlighted that the smaller the number of children, the more attention and dedication will be given to children; therefore, mothers and/or caregivers will feel able to properly perform the necessary care.<sup>(11)</sup> Additionally, a survey carried out in two northeastern municipalities that indicated that mothers with a greater number of children sought less health services.<sup>(25)</sup> This data can be explained by the fact that these mothers have more experience to care for children, requiring less search for hospital care. Still, research conducted in the countryside of Ceará showed that mothers with three or more children had children with more diarrheal episodes.<sup>(26)</sup> It is clear, therefore, that the number of children

can be a protective or risk factor. However, regardless of the number of children, it is important that child care is adequate to prevent diarrhea and that if this occurs, the family should seek health care.

It is pointed out that the intermediate SDHs, analyzed in the present study, were mainly related to the health context of the families studied. Even though they did not find a statistically significant association with the levels of maternal self-efficacy, it was found that mothers were more likely to have moderate self-efficacy to the detriment of high self-efficacy, when the source of water came from another source and not from the public supply network and when they did not have the waste destination carried out by public collection.

It is known that the lack of adequate sanitation is considered one of the main causes of water contamination for human supply and, therefore, contributes to cases of waterborne diseases.<sup>(27)</sup> Thus, improvements in water quality, basic sanitation and hygiene conditions of the population could reduce cases of diarrheal diseases, especially in more vulnerable age groups, such as children.<sup>(28)</sup>

The intermediate SDHs that correspond to the type of house and type of floor are directly related to the living conditions of families, and have an impact on human health, since it is estimated that the most vulnerable, such as children, spend 80 to 90% of their time in residence.<sup>(29)</sup>

A study carried out in Ceará showed that living in a brick house with plaster and ceramic or cement floors had a significant correlation with maternal self-efficacy to prevent childhood diarrhea.<sup>(16)</sup> Similarly, a cross-sectional study carried out in the city of Guarulhos, in São Paulo, Brazil, states that the fact that the house is made of plastered bricks facilitates proper cleaning, promoting the prevention of diarrhea, consequently contributing to maternal self-efficacy in disease prevention.<sup>(30)</sup>

Regarding the intermediate SDH family income, there was also no statistical correlation with self-efficacy between mothers and/or caregivers. However, a study that sought to associate socioeconomic conditions with maternal self-efficacy to prevent childhood diarrhea, found that the lower the family income, the lower the levels of maternal

self-efficacy.<sup>(21)</sup> Thus, it is perceived that income is an SDH that affects the health status of individuals, as it allows meeting the basic needs of a family. In this regard, a survey conducted in Fortaleza showed that mothers with higher family income have better living and housing conditions, and these factors may influence their self-confidence in preventing childhood diarrhea.<sup>(11)</sup>

Exclusive overfeeding, with regard to intermediate SDH, researches point to breastfeeding as a protective factor against diarrhea in children, according to a prospective cohort study conducted in Vietnam, in 2012, with 1,049 infants, to investigate prenatal and early disease factors, such as diarrhea and pneumonia; it was noticed that the chance of a child being admitted for diarrhea decreased by another 60%, due to the practice of exclusive breastfeeding.<sup>(31)</sup>

The factors that influence breastfeeding are multidimensional, involving social, economic, cultural and psychological issues. Therefore, it is believed that children of mothers with high self-efficacy are more likely to receive exclusive breast milk for six months.

It is emphasized that the tier of distal determinants or macro-determinants was not integrated into this research; however, these determinants are relevant because they involve social, cultural and economic dimensions, where it manifests itself in the environment in which individuals are inserted. In addition, these aspects make it possible to identify their health condition, claim their legal rights, plan actions to be developed, aiming at the integrality and universality of assistance, as a principle of social justice, in addition to promoting sustainable development, reducing social inequalities and economic conditions, violence, environmental degradation and its effects on society.<sup>(8)</sup>

It is noteworthy that the HDI of the neighborhoods of V RO, as previously mentioned, is low. According to the Ceará Economic Research and Strategy Institute (IPECE - *Instituto de Pesquisa e Estratégia Econômica do Ceará*), of the ten neighborhoods in Fortaleza, Ceará with the lowest income, six are located in V RO.<sup>(32)</sup> Therefore, it is essential that the municipal manager also has the

knowledge of the influence of social, behavioral, cultural and economic factors in people's lives, for a better planning of their actions, making their performance in the health care of the population more comprehensive.

This study indicates that in order to promote children's health and prevent diarrhea, aspects such as the social determinants of health and the self-efficacy of mothers or caregivers need to be considered. In addition, to understand the context in which the child is inserted, they must be studied from a multidimensional angle so that health interventions can be more effective, in order to reduce hospitalizations and morbidity and mortality due to diarrhea in children under five years old.

The study had as a limitation the use of cross-sectional design, which did not allow the association of SDH and maternal self-efficacy to prevent childhood diarrhea over time. Thus, it is recommended that other studies be carried out with a longer follow-up time, with analysis of all SDH tiers, in addition to other variables.

It is expected that the data presented in this study will contribute to the performance of health professionals in primary care. Understanding SDH and how it interferes with health conditions is an important means of assessing individuals' ability to maintain health conditions, in addition to strengthening and directing a care plan strategically, considering social determinants, demands of the population and needs of their territories. Thus, it is urgent to offer subsidies for carrying out educational actions that promote healthy maternal behaviors in order to minimize morbidity and mortality due to diarrhea, to guide their patients to seek their rights through legal means, and propose the implementation of measures and changes in the health system itself where it is inserted according to its peculiarities.

## Conclusion

The use of EAPDI allowed to identify maternal self-efficacy levels to prevent childhood diarrhea and to verify the association with SDH. Statistical associations were observed between maternal self-ef-

ficacy and individual SDH: maternal age group. It was found that mothers aged 15 to 29 years were more likely to have moderate self-efficacy to prevent childhood diarrhea. Despite the intermediate SDHs showing no significant association in this study, mothers or caregivers with the SDH waste destination and inadequate household water source were the ones most likely to have moderate self-efficacy. Studies of this nature are pertinent to understand the context in which the child is inserted, thus enabling more effective interventions. Furthermore, given the knowledge about the association of SDH and maternal self-efficacy, nurses should place a greater emphasis on guiding mothers or caregivers of children on the prevention of diarrhea and promoting educational actions that aim to increase their self-efficacy in preventing the disease, even when inserted in less favored realities.

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## Collaborations

Mendes ERR, Paula PHA, Lima KF, Almeida PC, Pinheiro PNC, Melo ESJ and Barbosa LP contributed to the study design, data analysis and interpretation, writing of the article, relevant critical review of intellectual content and approval of the final version to be published.

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