

Original Article

ASSESSMENT OF THE MATERNAL SELF-EFFICACY FOR CHILD DIARRHEA PREVENTION

AVALIAÇÃO DA AUTOEFICÁCIA MATERNA PARA A PREVENÇÃO DA DIARREIA INFANTIL

EVALUACIÓN DE LA AUTOEFICACIA MATERNA PARA PREVENCIÓN DE LA DIARREA INFANTIL

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This study aims at assessing self-efficacy for preventing child diarrhea among mothers of children living in Quixadá, Ceará, Brazil. A descriptive, quantitative study was conducted in three Basic Health Units of Quixadá, CE, Brazil from March to May 2012. We interviewed 150 mothers of children under five years, using the socio demographic form and the Maternal Self-Efficacy Scale for Child Diarrhea Prevention. 51.3% of children had had diarrhea, 89% of the mothers had low self-efficacy for preventing child diarrhea. Items that showed greater disagreement were 'I am able to avoid my son putting dirty objects in his mouth' (10.2%). 'I am able to wash fruits and vegetables with sodium hypochlorite or bleach' (25.3%) and 'I am able not to give my child left over meals' (25.3%). The majority (89.0%) of the mothers had low self-efficacy for preventing child diarrhea. Thus, maternal self-efficacy should be considered for the prevention of child diarrhea.

Descriptors: Child Health; Diarrhea, Infantile; Self Efficacy; Nursing.

O objetivo deste estudo foi avaliar a autoeficácia para prevenir diarreia infantil entre mães de crianças residentes em Quixadá-Ceará. Estudo descritivo, quantitativo, realizado em três Unidades Básicas de Saúde de Quixadá-CE, de março a maio de 2012. Foram entrevistadas 150 mães de crianças menores de cinco anos, utilizando-se um formulário sociodemográfico e a Escala de Autoeficácia Materna para Prevenção da Diarreia Infantil. Das crianças, 51,3% já haviam tido diarreia. Os itens que evidenciaram menor autoeficácia foram "eu sou capaz de evitar que meu filho coloque objetos sujos na boca" (10,2%), "eu sou capaz de lavar as verduras e frutas com hipoclorito de sódio ou água sanitária" (25,3%) e "Eu sou capaz de não oferecer para o meu filho a sobra de refeições anteriores" (25,3%). A maioria (89,0%) das mães apresentou baixa autoeficácia para prevenir diarreia infantil. Assim, a autoeficácia materna deve ser considerada para a prevenção da diarreia infantil.

Descritores: Saúde da Criança; Diarreia Infantil; Autoeficácia; Enfermagem.

El objetivo fue evaluar la autoeficacia para prevenir la diarrea infantil entre madres de niños de Quixadá-Ceará, Brasil. Estudio descriptivo, cuantitativo, en tres Unidades Básicas de Salud de Quixadá-CE, de marzo a mayo de 2012. Se entrevistaron 150 madres de niños menores de cinco años, mediante formulario sociodemográfico y Escala de Autoeficacia Materna para Prevención de la Diarrea Infantil. 51,3% de los niños tuvieron diarrea; 89% de las madres presentaron niveles menores de autoeficacia para prevención de esta. Los ítems de menor autoeficacia fueron "soy capaz de evitar que mi hijo ponga objetos sucios en la boca" (10,2%), "soy capaz de lavar frutas y verduras con hipoclorito de sodio o lejía" (25,3%) y "no soy capaz de ofrecer a mi hijo sobrantes de refecciones anteriores" (25,3%). La mayoría de las madres (89,0%) presentó baja autoeficacia para prevenir la diarrea infantil. La autoeficacia materna debe ser considerada para evitar esta enfermedad.

Descriptores: Salud del Niño; Diarrea Infantil; Autoeficacia; Enfermería.

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INTRODUCTION

Despite the fact that diarrhea is, in a world level, keeps on being the second main cause of death among children under five years, in the last decades, a significant reduction of the morbimortality by this disease has been observed, followed by the improvement of social economic, demographic and health indicators⁽¹⁾.

In Brazil, from 1995 to 2005, the rates of diarrhea were considerably reduced. Comparing the Brazilian regions, in the Northeast the problem has a greater magnitude, once the risk of death by diarrhea in this population is about four or five times higher than in Southern Region⁽²⁾, although in the state of Ceará, the rates of hospitalization due to diarrhea in children under five years have been reduced from 19.8% in 2006 to 7.4% in 2010⁽³⁾.

Considering the mechanisms of transmission of the agents that cause diarrhea, it is possible to prevent the disease promoting breastfeeding, keeping the basic schedule of vaccination of the child updated, the children living in an environment with basic sewage system, always washing the hands of the children before the meals and after using the bathroom, using treated water to drink and to prepare the food, not allowing the children to walk bare foot, taking care with the storage of trash, among others. So, it is possible to perceive that, regarding the prevention of child diarrhea, many measures depend on the care of the children by their responsible subjects, in general by their mothers⁽⁴⁾.

Keeping in mind the influence of the mothers in the care rendered to the children, the relevance of their role in the reduction of child diarrhea is recognized. A research made in the Northern region of Brazil observed that the reduced knowledge of the mother, her low schooling and her young age are aspects which influence in the sickening of the children cause by acute diarrhea diseases⁽⁵⁾. It is worth highlighting that only the maternal adequate knowledge is not enough to promote child health. So, a mother can have knowledge of specific preventive acts against child diarrhea, but this does not guarantee that she feels able to incorporate such practices in her daily activities. This ability to judge oneself as being able to successfully perform a certain action is what is defined as self-efficacy⁽⁶⁾. Therefore, the knowledge of the mothers does not guarantee self-efficacy in the prevention of diarrhea in children.

Based on such explanations and considering the lack of studies related to the theme being questioned in the central countryside region, where the prevalence of cases of child diarrhea is still worrying, the following question arose: do the mothers of children resident in the county of Quixadá, Ceará, Brazil have self-efficacy to prevent child diarrhea?

In this context, it is possible to perceive the relevance of assessing maternal self-efficacy, keeping in mind that it can influence in the prevention of child diarrhea, being, therefore, a determinant factor to avoid the children getting sick by such pathology. So, the present study had as goal to assess self-efficacy to prevent child diarrhea among mothers of children residents in the county of Quixadá, CE, Brazil.

METHOD

The study was of a descriptive nature, with quantitative approach, having been developed in three Basic Health Units (BHU) in the county of Quixadá, situated in the central countryside of Ceará, Brazil.

The sample of the study was made up by 150 mothers of children with, at least, one son five years old or younger. Mothers with cognitive problems which would impede the participation in the study were excluded. In order to calculate the simple random sampling without reposition, a sampling error of 5% was considered, with a level of reliability of 90% and the amount of children under five years registered in the

units selected for the study, consisted in a total of 377, according to the data provided by the Secretaria Municipal de Saúde of Quixadá. The sample summed up 158, but there was sample loss of 5% due to the criteria of inclusion.

The data collection was made from March to May 2012, at the BHUs. The mothers were approached while they were waiting for the appointment of child welfare of their children, inviting them to participate in the research, and they were told about the objectives of the study and asked to sign an Informed Consent Form. It is worth highlighting that, for mothers under 18, the signing of the form was provided by a legal responsible subject. The following instruments were applied: form with socioeconomic, demographic and sanitary data and the Maternal Self-Efficacy Scale for the Prevention of the Child Diarrhea (MSESPCD).

The MSESPCD is a Likert Scale composed of two domains: family hygiene, with 15 items, and food/general practices, with nine, with a total of 24 items, with five options of answers (1 to 5), so that the total scores varied from 24 to 120 points. The level of maternal self-efficacy to prevent child diarrhea is considered low when 109 or fewer points are obtained; moderate from 110 to 114 and high equal to or above 115 points⁽⁴⁾. In the presentation of the results when showing the items according to the domains of MSESPCD, in order to make understanding easier, the similar answers were put into groups so that 'I totally disagree' and 'Disagree' and 'I agree' were grouped in 'I agree'.

The data were tabbed and processed through the Statistical Package for the Social Sciences program (SPSS Inc., Chicago, United States of America), version 17.0. For the analysis, the descriptive statistics was used, through absolute and relative frequencies, being analyzed according to the pertinent literature. The research was approved by the Committee of Ethics in Research of the Faculdade Católica Rainha do Sertão, under protocol number 200110200.

RESULTS

In Table 1, it is possible to observe the sociodemographic profile of the participant mothers in the study.

Table 1 - Distribution of the mothers according to socio-
demographic data. Quixadá, CE, Brazil, 2012

Variables	n	%
Schooling		
Iliteracy	2	1.3
Grade School	63	42.0
High School	75	50.0
University	10	6.7
Marital Status		
Married/Stable Union	76	50.7
Single	72	48.0
Widow	2	1.3
Occupation		
Housewife	91	60.6
Works outside	5	3.3
Studant	4	2.7
Others	50	33.4
Family Income*		
< 1 minimum wage	51	34.0
= 1 minimum wage	28	18.7
> 1 minimum wage	69	46.0
No income	2	1.3
	Avarage	Standard Deviation (SD)
Age	28.5	±8.2
Number of gestations	2.7	±2.3

**Minimum wage = \$ 260,8

The age range of the interviewed mother was from 16 to 53 years. Regarding the reproductive profile the number of gestations varied from 1 to 18. The average time for exclusive breastfeeding for these children was four months (SD±3).

Of the 150 participant mothers, 77 (51.3%) described diarrhea episodes in her children in the last 30 days. A great part reported that they had had diarrhea lasting for three days (n=21; 27.3%), followed by two days (n=20; 26%). There was an average of time of 4.8 days of diarrhea in the children, according to the mothers. Table 2 presented data on the aspects related to diarrhea and the behavior of the mothers of the 77 children.

Table 2 - Distribution of the children according tonosological characteristics of the diarrhea and maternalbehavior. Quixadá, CE, Brazil, 2012

Variables	n	%
Aspect of feces		
Liquid	51	66.2
Pasty	22	28.6
With blood	4	5.2
Symptoms associated to diarrhea		
Fever	11	14.3
Vomit	5	6.5
No sign or symptom	34	44.2
Fever and Vomit	27	35.0
Seeked health service		
Yes	63	81.8
No	14	18.2
Hospitalization by diarrhea		
Yes	17	22.1
No	60	77.9
Use of Medicine		
Yes	56	72.7
No	21	27.3
Home made medicine		
Yes	25	32.5
No	52	67.5
SRO offer		
Yes	46	59.7
No	31	40.3

Of the 77 children who had diarrhea, 25 (32.5%) used homemade medicine with the prevalence of homemade serum (21; 84.0%), followed by teas (4; 16.0%). It is worth highlighting that all the children who had diarrhea had been immunized against the rotavirus.

All the 150 mothers were questioned as to the orientation on the prevention of the child diarrhea. Most of them (102; 68.0%) reported never having received any information, while 48 (32.2%) reported having been informed previously, more than half (27; 56.3%) by nurses, 11 (22.8%) by doctors, 7 (14.6%) by health communitarian agents and 3 (6.3%) by other sources.

In tables 3 and 4, the items of MSESPCD are shown according to their domains: family hygiene and food/general practices, respectively.

Table 3 - Distribution of the mothers acc	ording to the family hygiene	domain. Quixadá, CE, Brazil, 2012
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Item —		I disagree		I sometimes agree		I agree	
Ite		n	%	n	n	%	n
04	I am able to wash my hands with water and soap before	8	5.3	15	10.0	127	84.7
	preparing/manipulating food.						
05	I am able to keep the place where I prepare the food clean.	12	8.0	15	10.0	123	82.0
06	I am able to cover the food and water after helping myself.	8	5.3	15	10.0	127	84.7
08	I am able to provide more than one bath to my child per day.	1	0.7	1	0.7	148	98.6
09	I am able to wash my hands with water and soap before feeding	10	6.7	21	14.0	119	79.4
	my son.						
10	I am able to avoid my son putting dirty objects in his mouth.	18	12.0	31	20.7	101	67.3
14	I am able to wash with water and soap the baby	-	-	-	-	150	100.0
	bottle/dummy/glass of my son after each use.						
15	I am able to wash my hands with water and soap after dealing	5	3.3	1	0.7	144	94.0
	with the trash can.						
16	I am able to cut my son nails whenever necessary.	1	0.7	1	0.7	148	98.6
17	I am able to put the trash out of my house in tied bags.	11	7.3	12	8.0	127	84.6
18	I am able to keep my home clean putting the trash out the	11	7.3	12	8.0	127	84.6
	house.						
19	I am able to wash my hands with water and soap after going to	6	4.0	12	8.0	132	88.0
	the bathroom.						
21	I am able to keep my house clean before my son walks/plays on	7	4.7	15	10.0	128	85.3
	the floor.						
22	I am able to keep my son in his shoes out of the house.	13	8.7	14	9.3	123	82.0
23	I am able to wash my hands with water and soap after cleaning	10	6.7	21	14.0	119	79.4
	my son, after he urinates or defecates.						

The item which received more affirmative answers of the mothers regarding the family hygiene

domain was 'I am able to wash with water and soap the baby bottle/dummy/glass of my son after each use' (100.0%) (item 14), while the item which presented the highest scores of 'I disagree' and 'I sometimes agree' was 'I am able to avoid my son putting dirty objects in

his mouth' (item 10), with 12.0% and 20.7%, respectively.

Thom		I disagree		I someti	mes agree	I agree	
Iten	1	No.	%	No.	No.	%	No.
01	I am able to make my son wash his hands with water and soap before the meals.	7	4.6	33	21.9	110	73.5
02	I am able to wash the vegetables and fruits with sodium hypochlorite or bleach.	38	25.3	23	15.3	89	59.4
03	I am able to observe the validity of the products before offering them to my son.	12	8.0	15	10.0	123	82.0
07	I am able to breastfeed my son for more than 6 months.	34	22.7	11	7.3	105	70.0
11	I am able not to offer my son the leftovers.	38	25.3	9	6.0	103	68.7
12	I am able to take my son to be vaccinated until he is five years old.	-	-	-	-	150	100.0
13	I am able to offer exclusive maternal breastfeeding for my son in his first six months of life.	11	7.4	27	18.0	112	74.7
20	I am able to offer healthy food to my son after he stops breastfeeding (for example: fruits, vegetables, meat, egg, chicken, rice, beans).	1	0.7	10	6.7	139	92.7
24	I am able to boil or filter the drinking water or buy mineral water to offer to my son.	11	7.4	12	8.0	127	84.6

The item in which the totality of the mothers agreed upon is regarding the food/general practices domains: "I am able to take my son to be vaccinated until he is five years old." (100.0%) (item 12). Regarding the option "I sometimes agree", the most highlighted item was "I am able to make my son wash his hands with water and soap before the meals" (21.9%) (item 01) and as to the option "I disagree" was "I am able to wash the vegetables and fruits with sodium hypochlorite or bleach" (25.3%) (item 02) and "I am able not to offer my son the leftovers" (25.3%) (item 11).

Regarding the maternal self-efficacy from the prevention of child diarrhea, it was possible to identify that most of the mothers presented low self-efficacy (No.=113; 89.0%), with the scores in the MSESPCD below 109, showing that they don't feel able/secure to prevent child diarrhea. Therefore, 7.9% (No.=10) presented moderate self-efficacy (scores from 110 to 114) and 3.1% (No.=4) had high self-efficacy to prevent diarrhea in their children (scores \geq 115).

DISCUSSION

The maternal age of this study matches the national findings of the IBGE (Brazilian Institute of Geography and Statistics), once the age range from 20 to 29 years has prevailed since 1999 in the proportion of birth registers per groups of maternal age, representing 53.5%, in 2009, in mother with age between 30 and 39 years presented a percentage of 24.8%⁽⁷⁾.

The low schooling of the mothers is a worrying factor, once a low degree of education of the mothers is considered a risk factor for sickening caused by acute diarrhea diseases in the children, a fact that can be due to the difficulty to understand the educational activities, many times limiting the search of the benefits necessary because of the little or no experience, also leading to the inefficacy of the care, especially regarding hygiene and food⁽⁵⁾.

Although most of the mothers (50.7%) presented as marital status being married or in a consensual union, many were single (48.0%). The absence of partners according to authors has a negative influence for the family budget, besides reducing the help when taking care of the $child^{(5)}$.

More than half of the mothers worked at home (60.6%), confirming the findings of a study made in the Northeast, in which 78.0% of the mothers work in their own homes⁽⁸⁾. Such fact is due to the existence of families with traditional structure, in which the father assumes the living of the family group and the mother, the function to answer for the care dedicated to the children.

As to the family income, 52.7% of the mothers lived with a monthly income of one minimum wage or less. This reality is considered precarious to satisfy all the basic needs of a family, above all, concerning food, hygiene and maintenance of care, it is a factor that can generate deficit in the care of the children, depending on the family priority to spend their income⁽⁹⁾.

Regarding the number of gestations of the mothers, there was a variation from 1 to 18, with an average of two. So, it can be considered that, the fewer children the mother has, the higher the probability of taking the necessary care of her son will be, thus reducing the risk of sickening. However, under the perspective of self-efficacy, the higher the number of children, the higher the possibility of successful previous experiences with child care and, in this case, in dealing with diarrhea, a factor that can be considered positive in the present study⁽⁴⁾.

Regarding the time of exclusive breastfeeding of the children studied, the average found was four months, showing to be superior to the study made by the MS⁽¹⁰⁾ (Health Department), which had an average of exclusive breastfeeding of 1.8 month, considering the Brazilian capital cities. A study made in the city of Fortaleza, Ceará, Brazil presented a prevalence of diarrhea of 23.6% in the children who had not been breastfed or with ineffective breastfeeding. These authors defend the maternal breastfeeding as a promoter of health of the child, once the maternal milk has immunological characteristics which prevent diarrhea⁽¹¹⁾.

It can be observed that 51.3% of the children had episodes of diarrhea, presenting liquid feces (66.2%), followed by fever and vomit (35.0%). Confirming these findings, a study made in Recife, Pernambuco, Brazil, with children with diarrhea caused by rotavirus showed that, of the twelve children analyzed, seven presented fever and eleven vomits⁽⁸⁾.

During the diarrhea, 81.8% of the mother took their children to some health service, however, 77.9% were not hospitalized in the hospital/maternity. It is known that, in many cases, diarrhea is controlled at home by the parents, so, many times, the children are not taken to the health services, which implies in the aggravation of some cases. The standard technicaloperational protocol to characterize the outbreak of diarrhea preconizes the orientation of the family to immediately seek the health services in case of diarrhea⁽¹²⁾.

Another important datum seen in this study was that most of the children who had had diarrhea, had taken the medicine prescribed by the doctor (72.7%) and some mothers reported that they had used homemade medicine (32.55%), mainly the homemade serum (84%). The therapy with homemade serum has been considered of great relevance due to the good acceptance by the population and for not depending on the system of supply. But, some problems may be related to its use, especially due to the lack of ability and knowledge of its preparation and administration. So, it is important to highlight the importance of the professional orientation regarding the use of these substances⁽¹³⁾.

Concerning the immunization against rotavirus, the mothers of all the children who had had diarrhea reported that they had been immunized (100%), being a positive factor, once the researchers state that the best way to prevent diarrhea is the vaccination against rotavirus, the main causative agent of child diarrhea⁽¹⁴⁾.

Most of the mothers (68.0%) reported not receiving any information on how to prevent child diarrhea. Those who reported to have received information stated that the transmission was made by the nurses, which reinforces the importance of the education in health as an excellent tool of work for the teams in the family health strategy. Scholars reinforce the importance of rendering information to the population to prevent child diarrhea, involving the symptoms, the treatment, the food and the search for health services, as well as the training of the health professionals for the confrontation of cases of diarrhea⁽¹²⁾.

Considering the maternal self-efficacy regarding family hygiene, it was observed that the mothers felt they were able to wash with water and soap the personal utensils of the child, such as the baby bottle, the gummy and the glass. But they didn't believe that they were able to avoid their children putting dirty objects in the mouth. Scholars state that little children keep habits that promote the dissemination of diseases, such as taking dirty objects to the mouth, lack of the practice of washing the hands and other hygienic habits⁽¹³⁾. So, it is important that the health professional intervenes in this chain of events which can cause diarrhea through educational measures to promote health, personal, food and domestic hygiene.

The results of the maternal self-efficacy regarding the food/general practices showed that the vaccination is a priority among the mothers who take their children to be vaccinated on the dates established and in the campaigns of vaccination obeying the health booklet of the child. Knowing that the rotavirus is a main causative agent of diarrhea, these findings of adhesion to vaccination are important for the reduction of the child morbimortality, being necessary that the health professionals keep the behavior of orientation of the mothers on the benefits of the immunization⁽¹⁴⁾. It was noticed that a great part to the mothers is not able to hygienize fruits and vegetables with sodium hypochlorite and bleach despite their scientific proof efficiency, which increases the risk of the child to diarrhea. The barriers related to this can reside in the lack of knowledge related to the dilution recommended for the elimination of pathogens causative of toxicinfections⁽¹⁵⁾.

Another aspect that can also be seen was the lack of preparation of the mothers regarding the offer of leftovers for their children, which can be justified by the low acquisitive power. A recent revision showed that one of the factors that influences in the occurrence of diarrhea is the social economical condition, being important to improve the acquisitive power of the families in order to prevent and reduce the cases of child diarrhea⁽¹⁶⁾.

It was observed that in this study not always the mothers make their children wash their hands before the meals. A study highlights that the lack of washing hands exposes the child population to frequent epidemic outbreaks of diarrhea, the main cause of death among the children fewer than five years⁽¹⁷⁾.

The mothers of the present research presented low self-efficacy to prevent child diarrhea, being a factor of extreme concern bearing in mind the innumerous consequences of this infections for the children. Therefore, the real need of the application of MSESPCD is noticed, so that the health professionals can check the priority area of acting and intervene in a directed way for the need of each family through appointments of childcare, home visits and strategies of education in health⁽⁴⁾.

CONCLUSION

In this research positive points were seen for the care of the child and the prevention of diarrhea such as: being a housewife and to have immunized their children with the vaccine against rotavirus. But, negative aspects were also verified, such as: low schooling and family income, being single, provide maternal breastfeeding for less than six months and not having received information on the prevention of diarrhea.

It was noticed that there was the predominance of low self-efficacy of the mothers in order to prevent child diarrhea, in the family hygiene domain the lower self-efficacy as to the care which involve avoiding their children to put dirty objects in the mouth was highlighted. In the food/general practices domain, the low self-efficacy was seen in items related to washing the children's hands with soap and water before the meals and hygienizing the fruits and vegetables with sodium hypochlorite or bleach. Therefore, these are the points which need to be worked with the mother by the health professionals, especially the nurse.

It was observed that the majority of the mothers have low self-efficacy in the prevention of diarrhea in their children, a fact that is a relevant risk factor for the occurrence of the disease. So, it is urgent that the nurses and the other health professionals focus, in their orientation and in the activities of education in health, the confidence of the mother to take care of her child, otherwise, probably interventions which aim at enhancing only the knowledge will not result in the preventions of child diarrhea.

COLLABORATIONS

Lopes TC, Chaves AFL and Rocha RS contributed for the conception, collection of data field, analysis, interpretation of the data, reading of the article and final approval of the version to be published. Joventino ES, Castelo ARP and Oriá MOB contributed for the analysis, interpretation of the data, reading of the article and final approval of the version to be published.

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