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RESEARCH

Validation of primer for promoting maternal self-efficacy in preventing childhood diarrhea

Validação de cartilha para promoção da autoeficácia materna na prevenção da diarreia infantil

Validez de la cartilla para la promoción de la autoeficacia materna en la prevención de la diarrea infantil

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ABSTRACT

Objective: to validate an educational primer, regarding content and design, for promoting maternal self-efficacy in preventing childhood diarrhea. **Method:** methodological study composed of 31 mothers of children under five years of age, in which the validation of the primer *You can prevent diarrhea in your child!* was carried out from the Content Validity Index (CVI), being evaluated as to the domains understanding, attractiveness, self-efficacy, cultural acceptance, and persuasion. **Results:** the primer was considered relevant and clear, with average concordance of 99.4% and 99.8%, respectively. The overall CVI was of 0.99, evidencing satisfactory level of agreement between the mothers. The assessment of domains generated satisfactory results. **Conclusion:** the primer was considered valid by the target audience; thus, it can be implemented for promoting maternal confidence to prevent childhood diarrhea.

Descriptors: Childhood Diarrhea; Validation Studies; Self-Efficacy; Health Education; Nursing.

RESUMO

Objetivo: validar uma cartilha educativa, quanto a conteúdo e aparência, elaborada para promover a autoeficácia materna na prevenção da diarreia infantil. **Método:** estudo metodológico com participação de 31 mães de crianças menores de cinco anos de idade, no qual se procedeu à validação da cartilha *Você é capaz de prevenir a diarreia no seu filho!* a partir do Índice de Validade de Conteúdo (IVC), sendo avaliada quanto aos domínios compreensão, atratividade, autoeficácia, aceitação cultural e persuasão. **Resultados:** a cartilha foi considerada clara e relevante, com média de concordância de 99,4% e 99,8%, respectivamente. O IVC global foi de 0,99, evidenciando nível satisfatório de concordância entre as mães. A avaliação dos domínios gerou resultados satisfatórios. **Conclusão:** a cartilha foi considerada válida pelo público-alvo, podendo ser implementada para promoção da confiança materna em prevenir a diarreia infantil.

Descritores: Diarreia Infantil; Estudos de Validação; Autoeficácia; Educação em Saúde; Enfermagem.

RESUMEN

Objetivo: validar una cartilla educativa, cuanto al contenido y la apariencia, elaborada para promocionar la autoeficacia materna en la prevención de la diarrea infantil. **Método:** Estudio metodológico con participación de 31 madres de niños menores de cinco años de edad, en el cual se ha procedido a la validez de la cartilla *¡Usted es capaz de prevenir la diarrea en su hijo! (en portugués: Você é capaz de prevenir a diarreia no seu filho!)* desde el Índice de Validez de Contenido (IVC), siendo evaluada cuanto a los dominios comprensión, atracción, autoeficacia, aceptación cultural y persuasión. **Resultados:** La cartilla ha sido considerada clara y relevante, con el promedio de concordancia del 99,4% y del 99,8%, respectivamente. El IVC global ha sido de 0,99, evidenciando nivel satisfactorio de concordancia entre las madres. La evaluación de los dominios ha generado

resultados satisfactorios. **Conclusión:** La cartilla ha sido considerada válida por el público-objetivo, pudiendo ser implementada para promoción de la confiabilidad materna en prevenir la diarrea infantil.
Descriptores: Diarrea Infantil; Estudios de Validez; Autoeficacia; Educación en Salud; Enfermería.

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INTRODUCTION

Diarrhea is among the most common causes of morbimortality among children worldwide, especially in developing countries, such as Brazil. Although it has shown decreased incidence and severity, many cases of childhood diarrhea are still registered[1]. This scenario can be modified from the expansion of interventions aimed at preventing and improving the management of diarrheal diseases[2].

Among the interventions aimed at preventing childhood diarrhea, we can highlight health education as a strategy that aims to build knowledge for changing behaviors and empowering the family to perform preventive care to the child[3]. From educational activities it is possible to develop the motivation, skills, and confidence necessary for the decision-making that result in improved quality of life and health[4].

Given this, the theory of self-efficacy[5] can be used to increase the personal trust in performing care and adopting a lifestyle that promotes health, thus it must be inserted in interventions related to healthcare for children.

The theory of self-efficacy is based on four motivational sources that play an important role in the origin and development of self-efficacy beliefs: experiences of success; modeling/vicarious experiences; verbal persuasion; and physiological states[5]. Although the sources influence the perception of effectiveness, it is their integration in the individual's cognitive model that determines the self-efficacy[5], contributing for changing the behavior and achieving the desired results[6].

Therefore, health care professionals, especially nurses, can use educational technologies to promote maternal self-efficacy concerning childhood diarrhea, so that even when facing adverse conditions, mothers can take care of their children's health the best way possible[7].

In the context of educational technologies, the primer stands out as a tool for promoting health, facilitator of the process of empowerment. Thereby, it is characterized as a printed material that contributes to the shared construction of knowledge and allows the users of the health system and their families a posterior reading. Thus, the primer can reinforce the verbal guidelines, acting as a guide in cases of doubt and assisting in the decision-making[8-9]. Despite its practical purpose, we highlight that educational technologies must be constructed from theoretical approaches[10].

Before that, it was elaborated the primer *You can prevent diarrhea in your child!* aimed at promoting maternal self-efficacy in preventing childhood diarrhea. The material was validated by specialized judges; however, in addition to this validation, the material must also be approved by the target population, since it was elaborated for its use, being necessary to know the public for which it was intended, as well as their needs[10-11].

Therefore, the validation of the primer by the target population is important because it makes it possible to check what was not understood and what must be added or enhanced, allowing to perceive any discrepancy between the exposed in the material and what was understood by the population[12]. Recognizing the need for validation of the primer by the target population, we opted in this study by the design and content factors to assess the clarity of the material and the understanding by the public who will use it. The study was conducted from the following question: Has the primer entitled *You can prevent diarrhea in your child!* valid content and design in the perspective of the target population?

OBJECTIVE

To validate an educational primer, regarding content and design, elaborated to promote maternal self-efficacy in preventing childhood diarrhea, material elaborated for mothers of children under 5 years of age.

METHOD

Ethical aspects

The study was approved by the Research Ethics Committee of the Federal University of Ceará (UFC) following the ethical principles for research involving humans, in accordance with the Resolution no. 466 from December 12, 2012 of the National Health Council. Data collection was started by signing an informed consent form (ICF), which was issued in two copies, one for the participants of the study.

Study design, location and period

This is a methodological study of content and design validation of the educational primer entitled *You can prevent diarrhea in your son!* carried out in the Family Development Center (Cedefam), in Fortaleza (CE), Brazil, from October to November 2015.

Population or sample: inclusion and exclusion criteria

The sample consisted of 31 mothers of children under five years of age. We follow the recommendations of authors who recommend 25 to 50 subjects to validate technologies/tools[13]. We highlight that the odd number of subjects was used to avoid draws on the answers and dubious questions[12].

The following inclusion criteria were adopted: mothers of at least one child under the age of five years and served in the institution abovementioned. We adopted as exclusion criteria: mothers with difficulties to evaluate the educational primer.

Study protocol

The primer *You can prevent diarrhea in your son!* is a printed educational material aimed at promoting maternal

self-efficacy to prevent such pathology in children. Regarding the content, the main topics addressed were: definition of childhood diarrhea; hygiene of the child and the mother; cleaning of the environment; washing of fruits and vegetables; food; vaccination; and conducts for managing diarrhea.

The definition of the content of the primer was based on other materials already validated: the Maternal Self-efficacy Scale for Preventing Early Childhood Diarrhea (EAPDI), with content validity index (CVI) of 0.96 and Cronbach's alpha of 0.84[14]; and the video "Childhood Diarrhea: you can prevent it," with CVI of 0.97[15], which were developed from the assumptions of the theory of self-efficacy[5].

We highlight that the primer was already validated by judges of content (with experience in teaching and assistance in child health) and technical judges (with experience in *design*), presenting overall CVI, regarding theoretical relevance, of 0.92 for judges of content and 1.00 for technical judges, which shows a great level of agreement among the judges, since a CVI above 0.8 gives validity to the assessed item[16]. After suggestions from judges, the second version was concluded with 32 pages, 22 for the content, eight before and after the texts, and two pages dedicated to notes for mothers to write important aspects read in the primer.

Validation of content and design of the primer by the target population occurred in two stages. In the first, 31 mothers who were awaiting care in the Cedefam were invited to participate in the study and then oriented to sign the ICF, thus characterizing a non-probabilistic sampling by convenience. Those who agreed were invited to go to a room and read the primer. During that time, the researcher remained in the room so that she could solve any doubts that mothers could present, not being stipulated time for reading.

In the second stage, it was applied an instrument[10,17] validated by the target population, which was adapted for this research, covering the following areas: understanding of the information contained in the primer; attractiveness, regarding the way the information is exposed, seeking to arouse greater interest in reading the material; self-efficacy, for developing the mother's confidence in performing the care presented in the primer; cultural acceptability, which involves the adaption of the material to the reality of the population to which it is intended; and persuasion, which assesses whether the information contained in the primer create opportunities to adopt healthier behaviors. This instrument also contains a checklist that allows to evaluate the clarity, relevance and degree of relevance in the pages of the educational primer. The degree of relevance was evaluated from a Likert-type scale, ranging from 1 (irrelevant) to 4 (very important), enabling the calculation of the CVI posteriorly. The instrument also contained a space for suggestions, besides demographic characterization of the participants[14].

Data were tabulated in the Statistical Package for the Social Sciences (SPSS, version 20, license no. 10101131007). We calculated the CVI of each page and then the full material for analyzing the validity of the educational primer. We highlight that each page presents specific content concerning the prevention of childhood diarrhea and promotion of self-efficacy. The CVI was calculated considering the degree of importance assigned to the pages, and may vary from -1 to +1, being considered valid the item that shows agreement between participants equal to or greater than 0.8[16]. Thereby, score +1 was attributed to pages with relevancy ranking of 3 or 4, from the Likert scale used[18]. Analysis of the overall CVI was carried out considering the average of the CVI attributed to each page of the primer and its respective confidence interval (CI), of 95%, calculated from the binomial test, and the p-value, where $p > 0.8$ confirms the appropriateness of the educational material elaborated and that the CVI calculated is valid.

The validity of design, evaluated from the response of the participants regarding the clarity and relevance of the material, it was considered relevant when obtained 75% agreement between mothers[19]. Regarding the analysis of the domains understanding, attractiveness, self-efficacy, cultural acceptability and persuasion, the answers of the participants were synthetically organized and subsequently presented in descriptive form.

RESULTS

The target population consisted of 31 mothers, who validated the second version of the primer. The age of the mothers ranged between 18 and 40 years, with an average of 25.3 years. Most of them was from Fortaleza (N = 30; 96.8%), had complete secondary education (N = 12; 31.7%), was in stable unions (N = 18; 58.1%) and was a homemaker (N = 13; 41.9%). In addition, 12 (38.7%) lived along with four people at the residence. The family income of the participants ranged from R$500.00 and R$5,000.00, with an average of R$1,847.00.

Mothers evaluated the educational primer on clarity, relevance and degree of relevance. Regarding the first aspect, the participants judged positively the primer so that the correlation between mothers remained between 93.5% to 100%, with an average of 99.4%. Pages 16 and 17 were evaluated with 96.7% of concordance between mothers, and page 22, with 93.5%.

Concerning the relevance of the primer, the reviews varied between 95.6% to 100%, with an average of 99.8%; only the cover did not present high score, but reached 95.6% approval among mothers, indicating high agreement among the participants.

As for the assessment of the first 23 pages (cover and content), the individual CVI was calculated from the degree of importance assigned to each page of the primer, ranging from 0.93 to 1.00. The material presented overall CVI of 0.99, showing great level of agreement among mothers (Table 1).

Mothers suggested 14 modifications to the primer, of which three were observed after evaluation of the researcher: put the term "health center" on the cover and throughout the material; indicate at what age the child must take the Rotavirus vaccine; and address the conduct in case of diarrhea in children who only take breastmilk. The suggestions which were not accepted were related to erroneous practices regarding child care, such as additional explanation on the preparations of homemade solution and on information that were not the focus of the primer (supplementary feeding and exclusive breastfeeding).

Table 1 – Distribution of the number of concordance between mothers for each page, Fortaleza, Ceará, Brazil, 2016

Page/Subject	nº	%	CVI *	(95% CI)%**	*p*
Cover	29	93	0.93	0.72 – 0.97	0.991
Presentation	31	100	1.00	0.86 – 1.00	1
Page 7/Definition of childhood diarrhea	31	100	1.00	0.86 – 1.00	1
Page 8/ Hand hygiene of the child	31	100	1.00	0.86 – 1.00	1
Page 9/ Personal hygiene of the child	31	100	1.00	0.86 – 1.00	1
Page 10/ Hygiene of children's belongings	31	100	1.00	0.86 – 1.00	1
Page 11/ Hand hygiene of the mother	31	100	1.00	0.86 – 1.00	1
Page 12/ Cleaning of the house	31	100	1.00	0.86 – 1.00	1
Page 13/ Proper garbage disposal	30	97	0.97	0.77 – 0.99	0.999
Page 14/ Hygiene of the environment of food preparation	31	100	1.00	0.86 – 1.00	1
Page 15/ Food care	31	100	1.00	0.86 – 1.00	1
Page 16/ Washing of fruits and vegetables	31	100	1.00	0.86 – 1.00	1
Page 16/ Washing of fruits and vegetables	31	100	1.00	0.86 – 1.00	1
Page 18/ Breastfeeding	31	100	1.00	0.86 – 1.00	1
Page 19/ Supplementary Feeding	31	100	1.00	0.86 – 1.00	1
Page 20/ Checking the expiration date of the food	31	100	1.00	0.86 – 1.00	1
Page 21/ Treating the drinking water	31	100	1.00	0.86 – 1.00	1
Page 21/ Treating the drinking water	31	100	1.00	0.86 – 1.00	1
Page 23/Rotavirus vaccine	31	100	1.00	0.86 – 1.00	1
Page 24/Conducts for managing diarrhea	31	100	1.00	0.86 – 1.00	1
Page 25/ Preparation of oral rehydration solution (ORS)	31	100	1.00	0.86 – 1.00	1
Page 26/ Feeding of children with diarrhea	31	100	1.00	0.86 – 1.00	1
Page 27/ Benefits for child health by following the care mentioned in the primer	30	97	0.97	0.77 – 0.99	0.999
Total			0.99		

*Note: N = 31; * Content Validity Index; ** 95% confidence interval, based on the binomial test.*

Table 2 – Descriptive analysis of mothers' responses in the self-efficacy domain of the primer, Fortaleza, Ceará, Brazil, 2016

	n	%
Mothers' evaluation of self-efficacy beliefs in the primer		
Mothers who believe they can follow what is in the primer	31	100
The primer has all the information the mothers need to make them feel confident in preventing diarrhea in children	28	90.3
A health professional is required to present and/or explain the primer to make them feel confident in following information	3	9.7
Most relevant care cited by the mothers for preventing childhood diarrhea, according to the primer		
Hand hygiene	16	51.6
Washing of fruits and vegetables	15	48.4
Cleaning of the environment	8	25.8
Food care	4	12.9
Breastfeeding	1	3.2
Vaccination	1	3.2
Care to avoid dehydration	1	3.2
Cutting nail care of children	1	3.2
Need for increased information in the primer		
No	25	80.6
Yes	6	19.4
Information suggested to be added in the primer		
Supplementary feeding	3	9.8
Coconut water supply when the child has diarrhea	1	3.2
Hygiene of belongings from the heating	1	3.2
Clarification on offer of fatty foods that may cause diarrhea	1	3.2

From the data exposed, we can observe that the educational primer had satisfactory ratings in terms of the clarity and relevance, and favorable results of CVI to the construct evaluated (maternal self-efficacy for preventing infant diarrhea).

Regarding the domains evaluated (understanding, attractiveness, self-efficacy, cultural acceptability, and persuasion), we found that mothers were able to verbally reproduce the guidelines described throughout the primer, which confirms the understanding. The material was also considered attractive and with good cultural acceptance, being reported by mothers the interest to complete the reading. The participants verbalized that they would be able to execute the knowledge acquired through the primer so that the material could be used for inquiries about prevention and conduct before the childhood diarrhea.

In the self-efficacy domain, though all mothers have stated they were able to follow the procedures described in the primer, three participants (9.7%) suggested that, for better understanding, the information should be explained by a professional. Hand hygiene (51.6%) and washing of fruits and vegetables (48.4%) were highlighted by the mothers as the most important content of the material, and most of the participants declared that there was no need of other information in addition to that already contained in the primer (80.6%) (Table 2). All mothers considered that the figures presented on pages helped in understanding the subject.

Finally, the mothers did not indicate need for inserting new pages or deleting any page of the educational primer, being the final version of the material composed of 32 pages, 22 for the content.

DISCUSSION

Results of previous researches, which served as a basis for elaborating the survey on the primary care for promoting maternal self-efficacy in preventing childhood diarrhea, showed that mothers presented similar characteristics to those from this study, such as low education and families consisting of more than three members[7,12]. These aspects reflect the reality of part of the Brazilian population, so that the educational primer emerges as a valid and reliable material both for economically disadvantaged families and those with greater socioeconomic conditions, since the primer is understandable to the lowest stratum of the population, it will also be for the highest.

Thereby, the validation by the target audience allows the written material to express ideas clearly, ensuring the understanding and avoiding dubious interpretations that may influence the development of concepts and/or inappropriate actions[10]. For this reason, national and international researches have carried out, in the process of elaborating educational materials, the validation by the target population, so that the material can be considered suitable for application in daily life[12,20-22]. Therefore, it is appropriate to point out that educational technologies can assist in nursing care and, in this case, reduce the rates of childhood diarrhea by promoting the empowerment of mothers[12].

In this research the mothers suggested the changes abovementioned to the primer, from which will be discussed three changes made. It was added the term "health center" throughout the primer for being the most widely used and known by the target population, meeting the need to portray its reality regarding the production of educational materials[23].

In the guidelines of the vaccination topic, it was added information about the period for immunization of the rotavirus vaccine; however, it was not added the specific range of two to four months for the vaccination, current at the time of validation[24], because the technical reports undergo constant updates. Thus, to keep the content of the primer updated for longer, we decided to insert guidelines for the mother to find a health professional who can inform the correct period of vaccination.

Regarding the care related to diarrhea in children who are in exclusive breastfeeding, new information was added based on the script of the educational video, proposed in previous research[15]. Thus, we advise to the mother to keep breastfeeding and, in addition, to offer to the child oral rehydration solution only, since it is consensus that breastfeeding must be maintained during episodes of diarrhea[25].

We also highlight the fact that some suggestions have not been accepted also occurred in other studies, being necessary to assess whether the mothers' suggestions are relevant to the purpose of the educational material[12].

Concerning the homemade solution, we preferred to not insert instructions about its preparation, because currently it is preferred that the mothers use the solution already prepared in sachet of ORS to prevent dehydration in cases of diarrhea, in view of the risk of the wrong concentration of salt and/or sugar in the homemade solution to cause hyponatremia in the child[26]. A systematic review shows that there is no evidence about the effectiveness of other fluids, such as homemade solution, to combat child death from dehydration. However, we must note that the SRO, recommended by the World Health Organization (WHO), is an effective method in this context[27].

Regarding the domains evaluated, it is appropriate to point out that other researches[12,20] noted the importance of examining the same properties on the validation of educational materials by the target population, because this evaluation process allows to check the participants' learning as well as the adequacy of health instructions contained in the materials[10].

The result for the self-efficacy domain, in which all mothers claimed to feel able to follow the guidelines indicated in the primer, is due to the fact of reading the material has enabled the development of motivation and security to undertake the actions or behaviors described to improve health[10] and raise the self-efficacy to prevent childhood diarrhea.

Concerning the care covered in the primer, as already pointed out, hand hygiene and of fruits and vegetables was considered by the mothers as the most important care to be followed. We highlight that mothers pointed out relevant themes, because earlier study shows influence of inadequate hygiene in the occurrence of diarrhea episodes[28]. However, many people still assign diarrhea to supernatural factors and dental eruptions, which shows a lack of knowledge about the mode of transmission, as well as the definition of the disease[29]. Another research conducted with mothers accompanying children hospitalized for diarrhea revealed that maternal knowledge about the pathology was based on cultural beliefs and symptoms of the child[30].

Thus, it is appropriate to point out that the lack of knowledge, difficulty to memorize and the vulnerability of the customers can be some of the factors justifying the development of educational technologies[31], being important that the textual preparation of educational materials be suitable for the educational and cultural level of the target audience[32]. Such requirements have been met by other researchers, whose experimental studies showed that the application of an educational video[7] and a TV series[33], built from the theory of self-efficacy and validated by judges of content and the target population, favored the elevation of maternal self-efficacy in preventing childhood diarrhea and in breastfeeding, contributing to reducing diarrhea in children, in addition to increasing the period of exclusive breastfeeding, respectively[7,33].

Therefore, the use of educational technologies is a viable alternative as a source of information and sensibility of the population, serving as a guide in case of doubts and assisting in the decision-making of the daily life and in verbal guidance, being a path to health promotion[34-35].

Study limitations

The limitation of this study is related to the completion of the validation of content and design of the primer by the target population in a single health unit of the city of Fortaleza and may introduce weaknesses regarding the cultural identification of readers of other places of Brazil.

Contributions to the field of nursing, health, or public policies

The use of the primer *You can prevent diarrhea in your child!* can assist educational activities developed by nurses and other health professionals, contributing to the promotion of mothers' self-efficacy for preventing diarrhea in their children. In addition, it must be noted that the primer is a tool easy to use and that requires few resources for application and may be used both by mothers and others responsible for the care of the child, such as parents, grandparents, uncles, among others.

Thereby, we hope the educational material designed be widely promoted, so that health professionals, mothers, families and caregivers can make use of this technology to improve the management, prevent diarrhea and, therefore, reduce the number of child deaths caused by diarrheal diseases.

CONCLUSION

From the results presented in this study, we can note that the primer *You can prevent diarrhea in your son!* was considered an educational material with content validity and appropriate design regarding the promotion of maternal self-efficacy in preventing childhood diarrhea, which may be evidenced by CVI exceeding 0.8 assigned by the target population.

The primer was also evaluated in a satisfactory way by the target population about the understanding, attractiveness, self-efficacy, cultural acceptance and persuasion. In addition, the participants verbalized domain on the subject, stating the increased motivation and confidence to adopt the desired behavior for preventing childhood diarrhea.

We highlight that the validation by the target population, described in this study, it is important to give more confidence to the material prepared. Thereby, we can say that the educational material is able to be used by health professionals in search of increasing maternal self-efficacy in preventing diarrhea in their children, which may reflect in a decrease of the recorded cases of this pathology and morbimortality for childhood diarrhea.

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REFERENCES

1. Walker CLF, Rudan I, Liu L, Nair H, Theodoratou E, Bhutta ZA, et al. Global burden of childhood pneumonia and diarrhoea. Lancet [Internet]. 2013 [cited 2017 Mar 25];381(9875):1405-16. Available from: http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(13)60222-6.pdf
2. Das JK, Bhutta ZA. Global challenges in acute diarrhea. Curr Opin Gastroenterol [Internet]. 2016 [cited 2017 Mar 12];32(1):18-23. Available from: https://insights.ovid.com/pubmed?pmid=26574867
3. O'Malley L, Adair P, Burnside G, Robinson L, Coffey M, Pine C. An evaluation of a storybook targeting parental attitudes, intention, and self-efficacy to change their child's oral health behavior. Health Psychol [Internet]. 2017 [cited 2017 Mar 15];36(2):152-9. Available from: https://pure.qub.ac.uk/portal/files/126186875/KFT_20paper_20Accepted_20version_20August_2017th_202016.pdf
4. Bookari K, Yeatman H, Williamson M. Falling short of dietary guidelines: what do Australian pregnant women really know? a cross sectional study. Women Birth [Internet]. 2017[cited 2017 Mar 22];30(1):9-17. Available from: http://www.womenandbirth.org/article/S1871-5192(16)30049-X/pdf
5. Bandura A. Regulation of cognitive processes through perceived self-efficacy. Dev Psychol [Internet]. 1989[cited 2017 Mar 29];25(5):729-35. Available from: https://www.uky.edu/~eushe2/Bandura/Bandura1989DP.html
6. Bandura A. On the functional properties of perceived self-efficacy revisited. J Manage [Internet]. 2012 [cited 2017 Mar 10];38(1):9-44.

Available from: http://journals.sagepub.com/doi/pdf/10.1177/0149206311410606

7. Joventino ES, Ximenes LB, Penha JC, Andrade LCO, Almeida PC. The use of educational video to promote maternal self-efficacy in preventing early childhood diarrhoea. Int J Nurs Pract [Internet]. 2017[cited 2017 Mar 19];23(3):e12524. Available from: http://onlinelibrary.wiley.com/doi/10.1111/ijn.12524/pdf

8. Athilingam P, Osorio RE, Kaplan H, Oliver D, O'Neachtain T, Rogal PJ. Embedding patient education in mobile platform for patients with heart failure: theory-based development and beta testing. Comput Inform Nurs [Internet]. 2016[cited 2017 Mar 30];34(2):92-8. Available from: https://insights.ovid.com/pubmed?pmid=26765655

9. Muller I, Kirby S, Yardley L. Understanding patient experiences of self-managing chronic dizziness: a qualitative study of booklet-based vestibular rehabilitation, with or without remote support. BMJ Open [Internet]. 2015[cited 2017 Jan 22];5(5):e007680. Available from: http://bmjopen.bmj.com/content/bmjopen/5/5/e007680.full.pdf

10. Doak CC, Doak LG, Root JH. Teaching patients with low literacy skills. 2nd ed. Philadelphia: J. B. Lippincott; 1996.

11. Albuquerque AFLL, Pinheiro AKB, Linhares FMP, Guedes TG. Technology for self-care for ostomized women's sexual and reproductive health. Rev Bras Enferm [Internet]. 2016[cited 2017 Jan 23];69(6):1099-106. Available from: http://www.scielo.br/pdf/reben/v69n6/en_0034-7167-reben-69-06-1164.pdf

12. Nascimento LA, Rodrigues AP, Joventino ES, Vieira NFC, Pinheiro PNC, Ximenes LB. Validation of educational video to promote self-efficacy in preventing childhood diarrhea. Health [Internet]. 2015 [cited 2017 Jan 12];7(2):192-200. Available from: http://file.scirp.org/pdf/Health_2015021016124076.pdf

13. Fehring RJ. Validating diagnostic labels: standardized methodology. In: Hurley ME, (Ed.). Classification of nursing diagnoses: proceedings of the sixth conference. St. Louis, MO: Mosby; 1986. p. 183-190.

14. Joventino ES, Ximenes LB, Almeida PC, Oriá MOB. The maternal self-efficacy scale for preventing early childhood diarrhea: validity and reliability. Public Health Nurs [Internet]. 2013[cited 2017 Jan 15];30(2):150-8. Available from: http://onlinelibrary.wiley.com/doi/10.1111/j.1525-1446.2012.01042.x/pdf

15. Joventino ES, Ferreira AMV, Sousa MFP, Penha JC, Oriá MOB, Almeida PC, et al. Educational video increases maternal self-efficacy for prevention of diarrhea in young children: a randomised clinical trial. Health [Internet]. 2014 [cited 2017 Jan 15];6(21):2867-74. Available from: http://file.scirp.org/pdf/Health_2014122314013937.pdf

16. Norwood SL. Research strategies for advanced practice nurses. Upper Saddle River, NJ: Prentice Hall Health; 2006.

17. Negretto GW, Almeida SHO, Dal Pizzoli TS. Development and evaluation of printed educational material to improve the medication compliance of pediatric patients after hospital discharge. Rev HCPA [Internet]. 2011 [cited 2017 Mar 15];31(4):433-50. Available from: http://seer.ufrgs.br/hcpa/article/view/23608/14953 Portuguese.

18. Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? critique and recommendations. Res Nurs Health [Internet]. 2006 [cited 2017 Mar 24];29(5):489-97. Available from: http://onlinelibrary.wiley.com/doi/10.1002/nur.20147/epdf

19. Fernandes MVL, Lacerda RA, Hallage NM. [Validation of indicators for controlling and preventing catheter-associated urinary tract infection]. Acta Paul Enferm [Internet]. 2006 [cited 2017 Jan 25];19(2):174-89. Available from: http://www.scielo.br/pdf/ape/v19n2/a09v19n2.pdf Portuguese.

20. Rodrigues AP, Nascimento LA, Dodt RCM, Oriá MOB, Ximenes LB. Validation of a flipchart for promotion of self-efficacy in breastfeeding. Acta Paul Enferm [Internet]. 2013 [cited 2017 Jan 12];26(6):586-93. Available from: http://www.scielo.br/pdf/ape/v26n6/en_13.pdf

21. Oliveira SC, Lopes MVO, Fernandes AFC. Development and validation of an educational booklet for healthy eating during pregnancy. Rev Latino-Am Enferm [Internet]. 2014[cited 2017 Jan 28];22(4):611-20. Available from: http://www.scielo.br/pdf/rlae/v22n4/0104-1169-rlae-22-04-00611.pdf

22. Choi J. Development and pilot test of pictograph-enhanced breast health-care instructions for community-residing immigrant women. Int J Nurs Pract [Internet]. 2012 [cited 2017 Mar 29];18(4):373-8. Available from: http://onlinelibrary.wiley.com/doi/10.1111/j.1440-172X.2012.02051.x/pdf

23. Oliveira PMP, Carvalho ALRF, Pagliuca LMF. Cultural adaptation of educative technology in health: string literature with a focus on breastfeeding. Texto Contexto Enferm [Internet]. 2014 [cited 2017 Jan 14];23(1):134-41. Available from: http://www.scielo.br/pdf/tce/v23n1/0104-0707-tce-23-01-00134.pdf

24. Brasil. Ministério da Saúde. Doença diarreica por rotavírus: vigilância epidemiológica e prevenção pela vacina oral de rotavírus humano: VORH [Internet]. Brasília: Ministério da Saúde; 2005 [cited 2017 Jan 26]. Available from: http://www.prefeitura.sp.gov.br/cidade/secretarias/upload/informe_rotavirus2_1254747927.pdf

25. Gaffey MF, Wazny K, Bassani DG, Bhutta ZA. Dietary management of childhood diarrhea in low- and middle-income countries: a systematic review. BMC Public Health [Internet]. 2013[cited 2016 Oct 23];13(Suppl 3):S17. Available from: http//www.ncbi.nlm.nih.gov/pmc/articles/PMC3847348/pdf/1471-2458-13-S3-S17.pdf

26. Hornung TS. Hyponatremia after rehydratation with sports drinks. Lancet [Internet]. 1995 [cited 2017 Mar 24];345(8959):1243. Available from: https://www.sciencedirect.com/science/article/pii/S0140673695920285

27. Munos MK, Walker CLF, Black RE. The effect of oral rehydration solution and recommended home fluids on diarrhea mortality. Int J Epidemiol [Internet]. 2010[cited 2017 Mar 14];39(Suppl-1):i75-87. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2845864/pdf/dyq025.pdf

28. Aluisio AR, Maroof Z, Chandramohan D, Bruce J, Masher MI, Manaseki-Holland S, et al. Risk factors associated with recurrent diarrheal illnesses among children in Kabul, Afghanistan: a prospective cohort study. PLoS One [Internet]. 2015[cited 2017 Jan 24];10(2):e0116342. Available from: http//www.ncbi.nlm.nih.gov/pmc/articles/PMC4332656/pdf/pone.0116342.pdf

29. Kumar S, Tadakamadla J, Idris A, A Busaily IA, Allbrahim AYi. Knowledge of teething and prevalence of teething myths in mothers of Saudi Arabia. J Clin Pediatr Dent [Internet]. 2016[cited 2017 Mar 30];40(1):44-8. Available from: https://research-repository.griffith.edu.au/bitstream/handle/10072/348946/KumarPUB2431.pdf?sequence=1

30. Rego AP, Lima SP, Costa MCMDR, Santos LMC, Medeiros WR, Cavalcante ES. Knowledge of the mothers of hospitalized children in a university hospital regarding diarrhea. Rev Rene [Internet]. 2014 [cited 2017 Jan 30];15(1):29-36. Available from: http://www.revistarene.ufc.br/revista/index.php/revista/article/view/1243/pdf_1

31. Áfio ACE, Balbino AC, Alves MDS, Carvalho LV, Santos MCL, Oliveira NR. Analysis of the concept of nursing educational technology applied to the patient. Rev Rene [Internet]. 2014 [cited 2017 Jan 28];15(1):158-65. Available from: http://www.revistarene.ufc.br/revista/index.php/revista/article/view/1417/pdf_1

32. Teles LMR, Oliveira AS, Campos FC, Lima TM, Costa CC, Gomes LFS, et al. Development and validating an educational booklet for childbirth companions. Rev Esc Enferm USP [Internet]. 2014[cited 2017 Mar 14];48(6):977-84. Available from: http://www.scielo.br/pdf/reeusp/v48n6/0080-6234-reeusp-48-06-0977.pdf

33. Dodt RCM, Joventino ES, Aquino PS, Almeida PC, Ximenes LB. An experimental study of an educational intervention to promote maternal self-efficacy in breastfeeding. Rev Latino-Am Enferm [Internet]. 2015[cited 2017 Jan 24];23(4):725-32. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4623736/pdf/0104-1169-rlae-23-04-00725.pdf

34. Souza ACC, Moreira TMM, Borges JWP. Educational technologies designed to promote cardiovascular health in adults: integrative review. Rev Esc Enferm USP [Internet]. 2014 [cited 2017 Mar 24];48(5):941-8. Available from: http://www.scielo.br/pdf/reeusp/v48n5/0080-6234-reeusp-48-05-944.pdf

35. Berardinelli LMM, Guedes NAC, Ramos JP, Silva MGN. Educational technology as a strategy for the empowerment of people with chronic illnesses. Rev Enferm UERJ [Internet]. 2014 [cited 2017 Mar 19];22(5):603-9. Available from: http://www.e-publicacoes.uerj.br/index.php/enfermagemuerj/article/view/15509/12234