

## CONSTRUCTION AND VALIDATION OF EDUCATIONAL TECHNOLOGY WITH RECOMMENDATIONS FOR PREGNANT AND POSTPARTUM WOMEN ABOUT THE PANDEMIC<sup>1</sup>

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### ABSTRACT

**Objective:** To build and validate an educational technology that is easily accessible and understood by the target audience with safe recommendations for pregnant and postpartum women about the COVID-19 pandemic. **Methodology:** This is a review of the booklet. A methodological study developed in three stages was chosen: bibliographic survey, construction of an educational booklet and validation of the educational material by judges and legitimization of it by representatives of the target audience. To this end, the assessment instrument "Suitability Assessment of Materials" (SAM) was adopted in its translated version and adapted to Portuguese. This instrument evaluated various aspects of the material, such as content, appearance, and cultural appropriateness. **Results:** 6.28% of the judges evaluated the booklet as "excellent" and xx of the representatives of the target audience evaluated it in the same way. Both evaluations rated the material as "adequate". **Conclusion:** The booklet presents content and appearance appropriate to the target audience. However, some modifications are necessary for the better adaptation of the material and greater acceptance of it by the target audience.

**Keywords:** Women's Health. COVID-19. Pregnant. Postpartum women. Educational Technology. Validation Study.

### INTRODUCTION

After the advent of the COVID-19 pandemic, there was a mass spread of several topics, in their large proportion, unknown to the world population, spreading doubt, fear, and false news. It is known that all people were affected in some way, especially those who were classified as a risk group recommended by health regulatory agencies.

The World Health Organization (WHO) has classified pregnant and postpartum women as a risk group. Despite the mild manifestation in most of those infected, with mild symptoms such as cough and fever, some pregnant women presented more intense symptoms from the second half of pregnancy, such as runny nose, fatigue, dyspnea, and nasal congestion. In other cases,

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the complications were even more serious, such as severe acute respiratory syndrome (SARS) (ZAIGHAM; ANDERSSON, 2020).

The consequences of SARS-CoV-2 infection are still being studied, so little is known about the pathogen's action on the functioning of the human body, as well as the complications it can cause when added to preexisting diseases, such as diabetes. Within this panorama, pregnant and postpartum women, in addition to all the pregnancy novelty in which they were inserted, had to understand and interpret the risks and consequences, in addition to all the functional changes that COVID-19 could bring biopsychosocially to the phase in which they were. The main questions raised in this pandemic scenario in relation to women's reproductive health were: place and mode of delivery, ambivalence regarding the severity of the infection, breastfeeding, the right to the presence of a companion, in addition to the preventive measures already disclosed in relation to the flu-like syndrome caused by the new coronavirus.

Given that the whole context promoted an environment different from the usual, there was a movement that still advocated humanized care and comprehensive care for women and their demands, in addition to the guarantee of their rights. Sometimes, the multitude of information made it impossible for these women to seek useful and timely knowledge of their circumstances.

This search of people for information took place in a desperate and sometimes inconsequential way. The sources were unreliable, generating insecurity and discontent. In this sense, seeking to transpose the true news, with scientific rigor and theoretical basis to the reality of countless pregnant or postpartum women, the Núcleo de Atenção à Saúde da Coletividade (NASCER) and Roda Viva – Saúde e Direitos da Mulher em Pauta Program, linked to the Federal University of São João Del Rei, prepared and published a booklet with the main recommendations on the management of the new coronavirus in 2020.

However, the course of the pandemic brought many clarifications and raised new doubts about the coexistence of the pregnancy-puerperal cycle and SARS-CoV-2, making it necessary to review the material. The second version of the material, like the original, aims to help pregnant and puerperal women to better understand the current context and be able to choose the best to be done within their particularities, aiming to promote the health of the mother-child binomial.

## **METHODOLOGY**

This is a study with a methodological approach. The study was developed in three stages, namely: bibliographic survey, construction of the educational material, validation of the material

by experts in the subject (judges) and legitimization of the same educational material by representatives of the target audience (ECHER, 2005).

For the bibliographic survey, the PubMed database, official manuals of the Ministry of Health, as well as data and materials published by national and international bodies of relevance to the theme worked on were used. As it is a review of material, the first edition of the booklet published in 2020 was used as a reference.

The main objective of the second stage of the study was to build an accessible and easy-to-understand material for the target audience, seeking to address, based on scientific evidence, several doubts related to the management of COVID-19 during the pregnancy-puerperal cycle.

After the preparation and review of the content, the layout of the booklet was formatted in order to make it visually attractive to the reader using the CANVA platform.

For the validation of the booklet, 63 researchers from the areas of Collective Health, Women's Health, Gynecology and Obstetrics, Pediatrics and Neonatology in Brazil and abroad were selected. The judges received an invitation to participate in the study via e-mail and, along with it, the revised version of the material as well as the evaluation form. Legitimation, in turn, had the participation of pregnant, puerperal and breastfeeding women with children up to 1 year old. It should be noted that the invitation to participate by the target audience was made through the social media of the NASCER Program and that the participants received the revised version and the legitimization form of the material.

The "Suitability Assessment of Materials" (SAM) was selected as an instrument for validation and legitimization of the booklet. The SAM allows a broad evaluation of the material, with the following aspects evaluated: content, literacy requirement, illustrations, layout and presentation, learning stimulation and motivation, and cultural adequacy. In this study, the version translated and adapted to Portuguese (SOUSA et al, 2015) was used, with specific changes to better suit the public.

## **RESULTS AND DISCUSSION**

The booklet called "Coronavirus pandemic: recommendations for pregnant and postpartum women", was divided into four main axes and later organized into subtitles that fit into these themes, namely: 1 – General approach, presentation and ways to prevent COVID-19; 2 – The correlation of the disease with pregnancy; 3 – COVID-19 and puerperium and finally, 4 – COVID-19 and breastfeeding. As for the construction of the material, we sought to address in the illustrations, characters that related to the subject present on the pages or in the chapter

itself, in addition to the use of a clear and simple language that favored the interest, understanding and appreciation by the target audience, generating an approximation and bond.

The first version of the booklet (2020) contains 78 pages and was prepared by 13 authors. It was made available in the online version for download on the social networks of the programs linked to women's health at the Federal University of São João del-Rei and was also disseminated through the institution's official communication networks. The validation of the original version was done by the coordinating teachers of the NASCER and Roda Viva Programs through reading, correction and evaluation of the content. For the validation of the updated version, it was decided to include experts (judges) and representatives of the target audience in the validation and legitimization process, respectively.

One of the greatest difficulties encountered throughout the development of the study was the non-involvement of the invited judges. Another obstacle observed was the lack of reading habits on the part of the target audience. This factor is directly related to the low engagement of women in the survey, given that the material has 117 pages.

In addition to the answers obtained through the forms (TABLE 1), the judges had the opportunity to make suggestions and criticisms for a second revision of the material under construction.

For the most part, experts questioned the extent of the material and advised a revision of it in view of the fact that a shorter booklet could be more attractive to the target audience.

*"The booklet is very well prepared, with complete text, illustrations and color. However, I wondered about the amount of information. Wouldn't it be possible to reduce it a little, uniting contents, without losing the richness of information? This question arises thinking about the target audience that will use it. Will people feel like reading by looking at the amount of content? It seems to me that if with more illustrations and less text, generally, the population is more interested. I point out that it was only reflections that emerged when reading, but if the authors do not agree, everything remains as it is, because it is a beautiful work."*

*"... I consider the theme relevant, however I found the content long and repetitive. I think it could be more succinct and directed, highlighting the main guidelines to the interlocutor."*

Some experts also suggested greater care with the language used and the images used.

*"The material is quite complete, but it seems to have been written for health professionals. There's a lot of information at a level of detail that might be uninteresting to the target audience. I usually take this type of material and ask myself if I would be interested in reading all that if it wasn't in the health area or if the material addressed a totally different topic from the area in which I work (such as engineering, for example)."*

**Table 1: Judges' responses to the "Validation of Educational Material Content" form**

Aspect Assessed	Very good	Adequate	Not suitable	It is not possible to evaluate this aspect of the material
<b>Content</b>				
The purpose of the Educational material is evident	7	4	-	-
The content deals with behaviors	7	4	-	-
Content is focused on purpose	7	3	1	-
Content highlights key points	6	4	1	-
<b>Literacy requirement</b>				
Reading level: the writing of the material allows an adequate and/or accessible reading of it by the target audience?	4	6	1	-
Material Uses Written in the active voice?	5	6	-	-
The text of the material has vocabulary with words Common?	5	6	-	-
The context comes before new information?	6	5	-	-
Learning is Topic-facilitated?	7	3	1	-
<b>Illustrations</b>				
The purpose of Is the illustration referring to the text clear?	7	3	1	-
The types of illustrations used In the material are:	7	2	2	-
Are the figures/illustrations relevant?	7	3	1	-
Lists, tables, folders, etc. is there an explanation?	7	3	1	-
Do the illustrations have a caption?	5	5	1	-
<b>Layout and presentation</b>				
Layout Feature	5	4	2	-
Size and font	8	3	-	-
The following are used Subtitles	7	4	-	-
<b>Learning stimulation and motivation</b>				

<b>Uses interaction</b>	5	5	-	1
<b>The guidelines are specific and give Examples</b>	6	5	-	-
<b>Motivation and self-efficacy</b>	6	3	-	2
		<b>Cultural Fit</b>		
<b>It is similar to your logic, language, and experience</b>	8	2	1	-
<b>Cultural image and Examples</b>	6	3	2	-

"... Many images are totally dispensable, do not make the material attractive, pollute the booklet and greatly increase the number of pages..."

In addition, some suggestions were made, such as the approach of the theme "food" to the material.

Regarding the representatives of the target audience, only 3 women, all pregnant, answered the questionnaire sent (TABLE 2).

Like the judges, the pregnant women who participated had the opportunity to give their opinion in a more subjective way about the material. One of the participants praised the material.

"Booklet rich in details and informative, being clear and pertinent."

The results received, as well as the authors' consideration of the material, made it possible to identify the strengths and weaknesses of the booklet. Among the potentialities listed are the significant and diverse volume of references used, the use of clear language and in active voice, the approach to all periods of the pregnancy-puerperal cycle and also the relevance of the material for the dissemination of reliable information and scientific evidence in the community. Regarding the weaknesses, the length of the booklet, the excess of information, the irrelevance of some images for the understanding of the content and, in some excerpts, the use of language inaccessible to the target audience stand out.

Table 2: Responses of the representatives of the target audience to the "Legitimation of Educational Material" form

<b>Aspect Assessed</b>	<b>Very good</b>	<b>Adequate</b>	<b>Not suitable</b>	<b>Not possible to evaluate this Material Appearance</b>
		<b>Content</b>		
<b>The purpose of the educational material Is it evident?</b>	1	2	-	-
<b>The content deals</b>	1	2	-	-

with behaviors that can be adopted or avoided by the Reader?				
The content is focused on the purpose of the material?	1	2	-	-
Contents highlights the most important points?	2	1	-	-
<b>Literacy requirement</b>				
Reading level: reading the material is easy understanding?	1	2	-	-
By reading the material, the reader can see Running the Proposed actions?	1	2	-	-
In the material, a vocabulary with Common words?	1	2	-	-
Does context come before new information?	1	2	-	-
Learning is Topic-facilitated?	1	2	-	-
		<b>Illustrations</b>		
The purpose of the illustration referring to the text Is it clear?	1	2	-	-
The types of illustrations used In the material are:	1	2	-	-
The figures/illustrations Are they relevant?	1	2	-	-
Lists, tables, folders, etc. have explanation?	1	2	-	-
The illustrations have caption?	1	2	-	-
<b>Layout and presentation</b>				
Feature of the layout	3	-	-	-
Size and type of letter	3	-	-	-
The following are used Subtitles	1	2	-	-
<b>Learning stimulation and motivation</b>				
Uses interaction	1	2	-	-
The guidelines are	1	2	-	-

and give examples				
Motivation and self effectiveness	1	2	-	-
		Cultural Fit		
It is similar to its logic, language, and experience	1	2	-	-
Cultural image and Examples	1	2	-	-

The results were analyzed according to the evaluation criterion proposed by the chosen instrument, Suitability Assessment of Materials, which proposes that the materials be classified as superior, adequate or not acceptable depending on the score obtained. The SAM considers a maximum score of 44 points, and each aspect can be evaluated as excellent (score = 2), adequate (score = 1), not adequate (score = 0) or not possible to evaluate (score = 0). The score is calculated taking into account the number of null answers (it was not possible to evaluate) received. (Table 1).

**Table 1:** *Evaluation criteria of the instrument "Suitability Assessment of Materials"*

M= Maximum score: 44
S = Total SAM score (sum of all factors)
N = Number of answers N/As above = _____ X2 = _____ T =
Adjusted Total Maximum Score = (M-N) Score Percentage = S/T

The SAM does not determine the percentage to be considered for each classification, so the following scores were considered for this study: Greater  $\geq 8\%$ ; Adequate 7.9% to 6%; Not adequate  $\leq 5.9\%$ . The material prepared reached scores of 6.28% among the judges and xx% among the pregnant women and, therefore, was classified as adequate.

## CONCLUSION

The booklet "Coronavirus pandemic: recommendations for pregnant and postpartum women" was considered adequate to the initially proposed objectives, thus constituting a new educational technology useful for the promotion of health education in the context of prevention against COVID-19. Adaptations are necessary so that the content prepared can be divided into an exclusive material for health professionals and another reduced and simplified version only for the target audience, without losing the richness and completeness of the information.

Despite the limitations of this study, such as the difficulty in contacting specialists for validation and also in obtaining feedback from pregnant and puerperal women regarding the reading of the booklet and the filling out of the form, the material is quite solid and it is believed



that its application in the most diverse spheres and sectors will favor the dissemination of safe sources, transmitting credibility and reliability to all who use the material as a basis for health promotion.

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