

# Maternity during the COVID-19 crises: Content validity of psychoeducational resources to coping with stress from the COVID-19 pandemic

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## Abstract

The COVID-19 pandemic can lead to stress, especially for pregnant women and mothers of babies. It is important to propose resources for them to cope with specific stressors and promote their health and well-being. Two psychoeducational flyers, based on the Coping Dispositional Theory, on information about the COVID-19 and on Positive Psychology interventions are presented in this article. The content validity of the flyers was analyzed, adopting CVC indexes  $\geq 0.80$ . Five experts evaluated the flyers qualitatively, while nine pregnant women and mothers, evaluated them using a 5-point Likert scale. They responded to a Google Form, sent via WhatsApp, which included a TCLE, a General data protocol and a Questionnaire about the clarity of language, relevance, pertinence, and presentation of the flyers. Considering the results, we highlight the validity of the flyers for pregnant women (CVC  $\geq 0.93$ ) and for mothers (CVC  $\geq 0.86$  and 1.0) as useful resources for coping with the COVID-19 pandemic.

**Keywords:** 2019 novel coronavirus epidemic; stress; coping; pregnancy; puerperium.

## Resumo

*Maternidade em tempos de COVID-19: validade de conteúdo de recursos psicoeducativos para enfrentamento do estresse da pandemia da COVID-19.* A pandemia da COVID-19 resulta em estresse, especialmente para gestantes e mães de bebês. É importante propor recursos para elas lidarem com estressores específicos e, então, promover sua saúde e bem-estar. Dois flyers psicoeducativos, baseados na Teoria Disposicional do Coping, informações sobre a COVID-19 e intervenções da Psicologia Positiva são apresentados neste artigo. A validade de conteúdo dos flyers foi analisada, adotando-se índices CVC  $\geq 0.80$ . Cinco experts avaliaram qualitativamente, enquanto nove participantes, gestantes e mães, avaliaram os flyers usando uma escala Likert de 5 pontos. Elas responderam a um Google Form enviado via WhatsApp, que incluiu TCLE, Protocolo de dados gerais e Questionário sobre clareza da linguagem, pertinência, relevância e apresentação dos flyers. Destaca-se a validade dos flyers para gestantes (CVC  $\geq 0.93$ ) e mães (CVC  $\geq 0.86$  e 1.0) como recursos úteis para enfrentar a pandemia da COVID-19.

**Palavras-chave:** epidemia pelo novo coronavírus 2019; stress; coping; gravidez; puerpério.

## Resumen

*Maternidad en tiempos de COVID-19: validez de contenido de recursos psicoeducativos para enfrentar el estrés de la pandemia del COVID-19.* La pandemia del COVID-19 produce estrés, especialmente para mujeres embarazadas y madres de bebés. Es importante proponer recursos para que ellas se puedan enfrentar los estresores específicos y luego promover su salud y bienestar. En este artículo se presentan dos folletos psicoeducativos, basados en la Teoría de Afrontamiento Disposicional, información sobre el COVID-19 y las intervenciones de la Psicología Positiva. Se analizó la validez de contenido de los folletos, adoptando índices CVC  $\geq 0.80$ . Cinco expertos evaluaron cualitativamente, mientras que nueve participantes, mujeres embarazadas y madres, evaluaron los folletos utilizando una escala Likert de 5 puntos. Ellas respondieron a un formulario de Google, enviado a través de WhatsApp, que incluía el TCLE, Protocolo general de datos y Cuestionario sobre comprensión del lenguaje, relevancia, pertinencia y presentación de los folletos. La validez de los folletos para mujeres embarazadas (CVC  $\geq 0.93$ ) y para madres (CVC  $\geq 0.86$  y 1.0) se destacan como recursos útiles para afrontar la pandemia del COVID-19.

**Palabras clave:** epidemia por el nuevo coronavirus 2019; stress; afrontamiento; embarazo; puerperio.

From a cognitive perspective, coping is understood as a process based on "(...) cognitive and behavioral efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984). Based on this perspective, for C. S Carver's Coping Dispositional Theory, people adopt coping styles according to their personal characteristics, such as their temperament and self-regulation, to cope with stressful events (Carver & Connor-Smith, 2010; Carver & Scheier, 1994; Carver, Scheier, & Weintraub, 1989).

According to this theory, the COVID-19 pandemic scenario (World Health Organization [WHO], 2020) can be interpreted as a stressful event, perceived as a reality that imposes challenges and threats or causes damage to the needs of the self, which are faced by the person using efforts or resources focused on the problem, emotion or both (Carver & Connor-Smith, 2010; Carver & Scheier, 1994). Based on coping styles, it is understood that a person tends to face the stress caused by the pandemic by adopting resources, cognitive and or behavioral, based on engaged strategies, such as planning, acceptance, positive reinterpretation and growth; or disengaged strategies, such as denial and mental disengagement, which are chosen according to their interpretation of stressful events (Carver & Connor-Smith, 2010; Carver & Scheier, 1994).

Based on this, during a pandemic such as that of COVID-19, it is possible to help people to interpret stressful events in a more positive way, thus helping them to recognize their positive resources or to adopt engaged and resilient strategies to face the pandemic. For this, approaches such as Positive Psychology, together with theories such as Coping Dispositional Theory, can be interesting to better understand how people can be affected by the stress of the pandemic, which makes it possible to plan intervention measures to support and promote health and well-being for the current moment.

According to Positive Psychology, mental health is not only the absence of mental disorders, but also the person's ability to develop resilient strategies for the management of their psychological well-being (Seligman & Csikszentmihalyi, 2000). With a focus on promoting psychological and emotional health and developing human potential, it is possible, through positive psychological interventions, to assist in emotional self-regulation by facilitating a person to learn adaptive strategies to deal with stress and ensure

their well-being (Noronha, Baptista, & Borges, 2018; Seligman & Csikszentmihalyi, 2000; Zanon, Dellazzana-Zanon, Weschler, Fabretti, & Rocha, 2020).

Factors such as resilience, compassion, hope, creativity, optimism and subjective well-being or happiness are indicated as mediators and moderators in coping with stress (Carver & Connor-Smith, 2010; Carver, Scheier, & Segerstron, 2010). Resilience, for example, is the individual competence to respond positively to stress and adversity, which explains why some people do not succumb to stress, while others do (Rutter, 1987; Shatté, Perlman, Smith, & Lynch, 2017; Yunes, Fernandes, & Weschenfelder, 2018). On the other hand, other positive psychological interventions, such as mindfulness, have proven to be efficient on the prevention and treatment of important mental disorders (Souza-Filho & Pacheco, 2018), including puerperal depression (Dimidjian et al., 2016).

Therefore, when combined, Positive Psychology and Coping's Dispositional Theory can be efficient theories to support interventions that aim to help with the stress coping in critical situations such as the COVID-19 pandemic, especially for populations at greater physical and psychological vulnerability, such as pregnant and puerperal women (Maldonado, 2017). According to the WHO (2020) these are target populations for actions to prevent pandemic risks. In addition, in April 2020, the Brazilian Health Ministry determined pregnant and postpartum women up to two weeks after delivery to be a risk group for COVID-19, considering that they are more susceptible to infections (Ministério da Saúde, 2020).

Faced with this new disease, not yet fully known by national and international agencies, or by researchers and the world population, a new scenario of pregnancy and birth emerges. Now, the daily life of pregnant women and of women who have recently given birth has been transformed by the COVID-19 control measures. Thus, measures such as social isolation, intense hygiene, the use of a mask and others, adopted around the world to contain the spread of the disease, have become important stressors for pregnant women and mothers of small babies, since they increase their concerns, insecurities and fears about pregnancy, childbirth and the puerperal period.

Taking all that into consideration, it is noteworthy that actions to prevent maternal stress during pregnancy and the puerperium are fundamental, especially due to the negative outcomes for the mother-baby

dyad. Gestational stress has been strongly related to fetal development, with subsequent unfolding and adverse consequences for the child's development (Glover, 2015; Ramborger, Zubilete, & Acosta, 2018) and the mother's mental health in the postpartum period (Arrais & Araújo, 2017; Rodrigues & Schiavo, 2011).

Considering that resilient strategies for coping with pandemic stressors can help the well-being of the pregnant and postpartum population, the objective of this article is to present a proposal for psychoeducational resources, and their content validity, to help pregnant women and mothers of babies under six months old to cope with the stress resulted from the COVID-19 pandemic.

## Method

### **General Presentation of the Proposal**

The proposal for psychoeducational resources in the format of digital flyers was planned based on the theoretical and practical principles of Psychology approaches. The flyers (a) Pregnant during the pandemic: information to know about COVID-19 in pregnancy and (b) Motherhood and COVID-19: information for mothers about new routines during the pandemic, were developed by an interdisciplinary team of research, study and intervention in the areas of Perinatal Psychology and Maternal and Child Health at Federal University of Rio de Janeiro (UFRJ) Maternity School Unit.

In general, both flyers gather information on: a) the recommendations for prenatal care, childbirth and puerperium from the World Health Organization, the Royal College of London, the Brazilian Health Ministry and other organizations, such as the Brazilian Society of Pediatrics and the Brazilian Federation of Gynecology and Obstetrics Associations (FEBRASGO), in addition to research data on COVID-19 published in national and international journals; b) the main stressors for the target population, in the case of pregnant women and mothers of babies under six months old, as well as how these stressors are perceived and felt by them; c) coping and positive psychological intervention strategies, presented as practical tips to help the target population to deal more resiliently with the stressors arising from the pandemic.

### **Theoretical Basis for the Flyers Development**

For the theoretical basis of the flyers, Coping Dispositional Theory assumptions, proposed by C. S.

Carver and collaborators (Carver & Scheier, 1994), and Positive Psychology principles, proposed by M. Seligman and collaborators (Seligman & Csikszentmihalyi, 2000) were adopted. Based on these theories the stressors were analyzed and strategies for coping with the stress caused by the pandemic were proposed by adopting a systemic and contextual perspective based on bioecological theory (Bronfenbrenner, 1996; 2005). According to this perspective, the individual and contextual aspects (of the context, of the person and their interactional processes) were considered in the analysis of the COVID-19 pandemic scenario, considering their specificities for each type of the target populations. Also, the pandemic stressors were considered as events, from microsystems (family, for example) to macrosystems (culture, for example), which can be perceived and interpreted by pregnant and puerperal women as factors that would cause them harm, representing threats or simply challenges to the self, as proposed by the Coping Dispositional Theory in intersection with the systemic perspective proposed by Bronfenbrenner's Bioecological Theory.

Accordingly, to compose the flyers, the specific stressors of the pandemic for the target populations were identified on websites, blogs, vlogs and in the national and international literature, as well as information about COVID-19 related to pregnancy and the puerperium were collected. In general, social isolation and detachment were common stressors for both pregnant and postpartum women. On the other hand, the specific stressors for the pregnant population were the vertical transmission of the coronavirus to the fetus and the changes in the plans for pregnancy and childbirth, while for the puerperal women, the stressors were represented by concerns about breastfeeding and care for the newborn baby without family support due to social isolation.

Effective strategies to reduce the effects of stressors were proposed based on the theoretical framework. The flyers were developed by integrating information about COVID-19 and the stressors of the pandemic, seeking to analyze how each stressor would be perceived and interpreted by pregnant and puerperal women, as well as indicating positive interventions and coping strategies for coping with the stressors. Both flyers focused on a clear, accessible and educational language so that pregnant and puerperal women were able to understand the information and adopt the proposed strategies.

To contribute to this aim, the information on the flyers was organized as follows: a) the specific stressors and their effects on the mental health of pregnant and puerperal women and on baby care during the COVID-19 pandemic; b) suggestions for

strategies for the target population to deal with the stressors, seeking to promote their well-being and prevent stress and risks to their maternal mental health; and c) general information on protection and prevention of COVID-19. In both flyers, the

**Table 1.** Topics of the Flyer Pregnant During the Pandemic: Information to Know about COVID-19 in Pregnancy

Topics/Pandemic stressors		Information about the topics
1.	If I believe that I have COVID-19?	Informations based on Brazilian Health Ministry's (2020) recommendations to guide pregnant women on COVID-19 symptoms; Guidance on what to do if the disease is suspected or confirmed.
2.	Stress and the Pandemic	Information about the impacts of pandemic-related stress on women's mental health during pregnancy, such as mood and behaviour changes; Guidance on how to identify mood and behaviour changes, especially those that represent psychic suffering, such as anxiety or depression..
3.	How do I feel?	Information on the effects of pandemic stress on pregnant women's mental health, clarifying their concerns and feelings expected for the moment, related to fears (of contagion, for example) and anxiety (about social isolations measures, for example)
4.	How to Cope with COVID-19 with a positive attitude?	Coping strategies suggestion to face the pandemic specific stressors, as meditation for anxiety control and stress management, for example.
5.	How to protect yourself & others?	General recommendations about measures to prevent contagion by COVID-19 based on Brazilian Health Ministry's guidelines.
6.	Other informations	Clarifications about the possibility of changes in the flyer's information as long as new Pandemic data is released; Clarifications about when to search for online psychological assistance or assistance with their prenatal service; Information about emergency contacts, such as National Suicide Prevention Lifeline and Medical Emergency

**Table 2.** Topics of the Flyer Motherhood and COVID-19: Information for Mothers about New Routines during the Pandemic

Topics/Pandemic stressors		Information about the topics
1.	Social isolation and absence of your family	Information about the impact of social distancing measures, mainly focused on the effects that taking care of a baby by themselves have on puerperal women, like anxiety and stress.
2.	How can I cope With all of this?	Suggestion of coping strategies to deal with social isolation caused by the pandemic, such as adopting an optimistic perspective ("First of all, remember: The isolations is social and not emotional!") and use creativity to deal with the absence of family and friends ("Making video calls with your family and friends can help diminish that feeling, besides being a great opportunity to ask for advice about the baby.")
3.	Care and concerns with the baby	Information about the importance of early baby care, based on an affective interaction between mother and baby and on care promoting child development, such as eye contact or play and sing during baby's bath or feeding routine
4.	Care about breastfeeding	Information based on the Brazilian Health Ministry's guidelines on the prevention of COVID-19 infection during breastfeeding; Information on the importance of breastfeeding moment for the mother-baby affective bond, with guidelines to help in the difficulties of breastfeeding.
5.	General care about prevention	General recommendation for the prevention of COVID-19 infection based on Brazilian Health Ministry's guidelines.
6.	Other informations	Clarifications about the possibility of changes in the flyer's information as long as new Pandemic data is released; Clarifications about when to search for online psychological assistance or assistance with the hospital; Information about emergency contacts, such as Medical Emergency.

information was distributed in six thematic tables, as shown in Table 1 and Table 2.

Finally, the color and design of the flyers were chosen to make the material pleasant and inviting, seeking the attention of the target population and their support network for the content. For the development of the flyers, a virtual and free design creation platform was used, managed by the team itself. The format of the flyers was intended to facilitate its dissemination on social networks and on virtual groups of the target population, as well its sharing by health professionals via WhatsApps messages. It is important to highlight that the chosen format was also based on the concern to popularize scientific knowledge and facilitate the understanding of the information by the target population and its support network.

### ***Flyers Content Evaluation by the Judges***

Five expert judges, represented by an obstetrician for the pregnancy flyer, a pediatric neonatologist for the puerperium flyer, and three psychologists with expertise in the maternal and child area for both flyers, evaluated the material qualitatively, while nine judges from the target population (six pregnant women and three mothers) evaluated the flyers quantitatively. Four expert judges had a master's degree specialization and one had a doctorate. The sample of judges from the target population were conveniently recruited and had an average age of 28 years old (A.V. = 21-37). As for ethnicity, six declared themselves white, while three declared themselves brown. Regarding education, two had graduate degrees, three completed higher education and four had a high school degree.

The expert judges made a qualitative analysis of the flyers, which was sent by WhatsApp. All were asked to perform a free evaluation of the material, indicating criticisms and suggestions to be integrated into the final product. After the quantitative analysis of the target population judges and the qualitative analysis of the expert judges, the flyers were sent for evaluation by the Task Force LEPIDS COnVIDa Communication working group, composed of professionals with a PhD in Psychology and teaching researchers from Brazilian Federal Education Institutions with the purpose of gathering efforts facing the pandemic. In order to approve the psychoeducational materials for publication and dissemination linked to that Task Force, the professionals of the Communication working group carried out reviews and suggestions for the flyers in order to improve their presentation.

For the evaluation made by the target population judges, a Google Form was developed and sent to them by WhatsApp, being composed of: 1) Free and Informed Consent Form (TCLE), duly approved by the Research Ethics Committee (CAEE N. 31525720.0.0000.5275); 2) General data protocol, for the collection of sociodemographic data; and 3) Questionnaire for the flyers evaluation, with questions based on content validation criterias. Each judge was asked to assign a grade, based on a five-point Likert scale (1 = very little, 2 = little, 3 = medium, 4 = very, and 5 = very much), according to the following criteria: a) clarity, to assess the clarity of the language used on the formulation of the flyers; b) pertinence, to assess the adequacy of the content to the pregnant and postpartum population; c) relevance of the material, to assess how relevant the flyer was to help tackle the pandemic; and d) presentation, to evaluate the layout, color, organization and presentation of the flyer's content. This assessment was proposed based on guidelines for assessing the content validity of psychological instruments (Cassepp-Borges, Balbinotti, & Teodoro, 2010; Hernández-Nieto, 2002). The Content Validity Coefficients (CVC) were calculated to identify the adequacy of the material and its validity for the proposed objective. The cut-off point adopted was  $CVC \geq 0.80$ , to estimate the occurrence of the indicated validity criteria (Hernández-Nieto, 2002).

## **Results and discussion**

### ***Evaluation by Experts and Other Professionals***

The evaluation by the expert judges ( $N = 5$ ) occurred before the evaluation from the target population. This evaluation conferred relevance in the analysis of the flyers content based on the judgment of specialists in the maternal and child area, who attested to the content's content validity according to its clarity, pertinence, relevance and presentation of the material. As stated by Santiago and Moreira (2019), expert analyzes can give higher quality to the final result of health education products, as observed in the flyers. As these evaluators indicated criticisms and recommendations during the development of the material, their contribution, both in the writing and in the organization and presentation of the content, added validity and technical quality to the flyers. Thus, the suggestions of the expert judges were incorporated into the final version of both psychoeducational resources to help with the COVID-19 pandemic.

It was observed that in their criticisms and/or recommendations, the experts focused on the assessment of the language and content, rather than on the presentation of the material. In general, all experts evaluated the material well, highlighting the importance and quality of the information presented in the flyers. They also emphasized the way in which the information was presented, being carefully organized to clarify and provide guidance based on scientific data, with technical and practical quality, but without causing panic. For the experts, the distribution of the themes in tables made it easier to understand the flyers' content, which was presented in the material in a clear and dynamic way.

In general, the experts' assessment was made according to their specialization and professional experience. Thus, doctors aimed their analysis to aspects related to the COVID-19 disease, while psychologists focused their analysis on the aspects related to the transmission of information, with the concern that it would be welcoming. Medical judges suggested the inclusion of information on disease prevention and control, such as wearing masks. Particularly for the puerperium flyer, the medical judge suggested that information on the use of masks during breastfeeding only in cases of suspected COVID-19 or presence of flu symptoms should be highlighted. Furthermore, the judge also suggested that information on sterilizing the breast pump to prevent contamination should be added. Both doctors also highlighted the aspects related to the accessibility of the material, which could be sent as health education resources via WhatsApp message, for example. Santiago and Moreira (2019) consider that the effectiveness of educational interventions in health is influenced by several variables, being among them the availability of accessible resources. Therefore, it can be said that, according to the experts' assessment, both flyers represent efficient psychoeducational resources for coping with the COVID-19 pandemic.

Assessments of language and content were also made by the expert judges. In particular, psychologists suggested changes in the wording of the information, adopting a more colloquial, less directive and more welcoming language in order to "minimize the impact of a difficult moment such as the COVID-19 pandemic" (According to Information Collected). They also contributed to the information presented on the content, suggesting that online psychological care, which has been more widely offered in this pandemic period, should be included in the flyers. In fact, this service, in addition

to the psychological care usually offered in the prenatal service, can be an accessible resource for pregnant women and mothers in psychological distress. In addition, psychologists also suggested changes to the puerperium flyer, proposing to include bathing, breastfeeding and diaper changing as opportunities to stimulate the baby by playing and talking to him.

Finally, the professionals of the Task Force LEPIDS CONVIDa Communication working group made suggestions on the content of the puerperium flyer, proposing a more optimistic perspective for the text in the board "Social isolation and the absence of your family". They also suggested for the board "General care about prevention" that strategies that promote creativity be included, proposing, for example, making video calls with family and friends to maintain social contact. Finally, it was emphasized that attention should be drawn to the role of the National Suicide Prevention Lifeline and Medical emergency in attending to cases of intense emotional suffering, as well as the need to seek professional help, if necessary.

The presentation of the flyers was evaluated only by the professionals of the Task Force LEPIDS CONVIDa Communication working group, who made considerations about the layout of the gestation flyer. They suggested that the board "How do I feel?" and "How to cope with COVID-19 with a positive attitude?" be placed in sequence. In addition, small suggestions in the written presentation, such as rewriting sentences to avoid repeated words, were proposed. It should be noted that, as a product linked to the Task Force LEPIDS CONVIDa, all of the working groups suggestions were integrated into the final version of the flyers, which was approved by the Task Force Coordination, enabling its publication and dissemination.

It is concluded that the expert judges' considerations about the materials represented an important stage for the validation of the psychoeducational resources proposed here, as expected for works of this type (Moura et al., 2017; Santiago & Moreira, 2019). As stated by Santiago and Moreira (2019), expert judges are able to contribute with a detailed and precise analysis, which contributes to a final quality product. The experts also assist in improving the applicability of health education resources when their suggestions are incorporated into the material (Moura et al., 2017; Santiago & Moreira, 2019), as was done in the final version of both flyers.

In addition, due to the proximity of the experts to the target population, they can assess, for example,

whether the issues addressed in the flyers would meet the demands of pregnant and puerperal women or whether the language used was appropriate for them. Taking that into consideration, we can say that the experts' contribution helped to improve the flyers, increasing their quality and ensuring greater scientific and technical accuracy to their content (Moura et al., 2017; Santiago & Moreira, 2019).

### **Evaluation by the Target Population**

The judges of the target population ( $N = 9$ ) were divided between pregnant ( $n = 6$ ) and puerperal women ( $n = 3$ ) who evaluated the flyers aimed at their respective group. The Content Validity Coefficients (CVC) of these judges are shown in Table 3.

For both flyers, the Content Validity Coefficients (CVC) were all above the established cutoff point ( $\geq 0.80$ ), which highlights the adequacy of the material to the proposed objectives according to the target population. In the flyer "Pregnant during the pandemic: information to know about COVID-19 in pregnancy", all CVCs were equal to 0.93, which suggests that this flyer was considered clear, pertinent, relevant and well presented by pregnant women. Regarding the flyer "Motherhood and COVID-19: information for mothers about new routines during the pandemic", CVCs varied between 0.86 and 1.0, conferring the flyer validity in all of the criterias, proving it to be a valid tool for puerperal women especially regarding the clarity of the language and presentation of the material.

**Table 3.** Analytics Data of the Gestation Flyer and Puerperium Flyer According to the Evaluation Criteria and The Content Validity Coefficients (CVC)

Evaluation Criteria	Pregnant Women						CVC*	Mother of babies			CVC*
	PW1	PW2	PW3	PW4	PW5	PW6		M1	M2	M3	
Clarity	5	4	4	5	5	5	0,93	5	5	5	1
Pertinence	5	4	4	5	5	5	0,93	4	4	5	0,86
Relevance	4	5	4	5	5	5	0,93	5	3	5	0,86
Presentation	5	5	4	5	5	5	0,93	5	5	5	1

\*CVC=Content Validity Coefficients

Especially for the puerperal women, the criteria with the lowest evaluation, but still with  $CVC \geq 0.80$ , were the relevance and pertinence of the material. Regarding the pertinence, that is, the adequacy of the content to the target population, the puerperal women who evaluated the flyer suggested that indications breastfeeding websites, where they could find practical guidelines and tips, should be included. It is worth highlighting the observation recorded by a puerperal woman about how breastfeeding is not a simple task:

it's almost impossible to learn to breastfeed from a distance. It's difficult, it's not just offering the breast and that's it. The baby does not know how to breastfeed ... if the mother is a first-time mother, she will also not know how to offer the breast in the right way, which can cause fissures and bleeding. So I believe that in this pandemic many women gave up on breastfeeding, without help it is very difficult. We are people, we need each other, even more in this moment that everything is new and surrounded by renunciation and physical pain... postpartum is very painful physically.

In this report, it is possible to perceive the anguish of this mother in the face of the difficulties of breastfeeding, which worsened with social isolation. It is important to discuss that early weaning can occur due to the influence of several factors, including psychological and social ones. Low confidence to breastfeed, inexperience in the case of primiparous women and the type of delivery, which can lead to a more painful and uncomfortable postpartum period, can decrease a woman's willingness to breastfeed. However, when there is support and guidance, whether professional or from family members, the chances of successful breastfeeding are higher (Margotti & Epifanio, 2014). Thus, we can say that the proposed flyer for women in the puerperium can be a means to encourage and assist the mother who wishes to breastfeed, welcoming her difficulties and reducing the chances of early weaning.

Regarding the material's relevance, that is, how relevant the flyer was considered by the target population to help tackle the pandemic, both pregnant and puerperal women made observations that were based on their concerns with COVID-19. This suggests that the

information about the disease and its prevention presented on the flyers may have benefited this population. Informational support is important to help with facing critical situations, especially those involving medical aspects, as illustrated by the report of one of the pregnant women who drew attention to the physical symptoms of pregnancy similar to COVID-19, which resulted in inclusion of clarifications in the flyer:

In my opinion, it would be interesting to highlight in the topic "If I think I have COVID-19?" that the sensation of shortness of breath is a common symptom of pregnancy, especially in the third trimester, and may not be related to COVID-19. Passing on this information prevents a pregnant woman who has difficulty breathing during the coronavirus pandemic to despair for fear of being infected - which can generate even more anxiety and, as a consequence, worsen the feeling of shortness of breath. It also prevents the pregnant woman from exposing herself to the virus unnecessarily, by going to a health unit to be evaluated. In addition, I think it is important to mention the importance of informing the obstetrician even in case of suspicion.

Once again, this report demonstrates how the evaluation of the flyers by the target population brings adequacy and validity to the content of health education resources (Santiago & Moreira, 2019). In this case, this evaluation helped in the adequacy of the information in the flyer in accordance with the proposed objectives. Supported by the Coping Dispositional Theory (Carver & Scheier, 1994), it is also suggested that the flyers could assist in the cognitive perception and interpretation of aspects of the pandemic through strategies to face the main stressors for the woman's and the baby's health. For example, for puerperal women, whose observations focused on the need for a support network to help with neonatal care and their postpartum difficulties due to social distance, offering creative strategies to deal with this situation can provide a more resilient coping with the situation. Considering that the puerperium is a sensitive period, in which women are more vulnerable to mental disorders, it can be assumed that psychoeducational resources, such as the flyer "Motherhood and COVID-19: information for mothers about new routines during the pandemic", can help to cope with the stress typical of this period, preventing more serious outcomes, such as postpartum depression, with an important impact on the mother-baby relationship (Glover, 2014; Rodrigues & Schiavo, 2011).

It is also noteworthy that both flyers were well evaluated for language clarity, which indicates how

much the target population was able to understand and assimilate the information and use it to help them cope with the pandemic, the main objective of the flyers. Considering that coping responses are based on the cognitive interpretation that the person has about the stressor (Carver & Scheier, 1994; Lazarus & Folkman, 1984), the content validity of the flyers based on the clarity of the language confirms the efficiency of this material to assist the target population to recognize and interpret the events of the pandemic that caused them stress, as well as to recognize the coping strategies to deal resiliently with the situation in order to guarantee their well-being, as provided in the initial proposal.

The choice of strategies for coping with stressors is indicated by the Coping Dispositional Theory as based on a "coping style", in other words, on cognitive and behavioral efforts that represent ways of coping with particular and individual problems or tendencies of response to the stressor. Self-regulation, for example, is a mediator among coping styles that is based on the individual's intentional ability to coordinate behaviors and emotions in the face of stressful events. From this perspective, the clarity of information about COVID-19, for example, can favor the self-regulation of pregnant women and women who have recently given birth, helping them to recognize what strategies they had to manage stress and ensure their psychological well-being. Along with the Positive Psychology interventions presented in the flyer, they had access to content that may have facilitated their choice for a more engaged way of coping with the stress caused by the pandemic.

Among the aspects necessary for the quality and validity of a psychoeducational resource, the criteria of pertinence and relevance are very important (Moura et al., 2017; Santiago & Moreira, 2019). Based on the positive evaluations of the target population, it is possible to assume that both pregnant and puerperal women were able to recognize the stressors and the efficiency of the coping strategies proposed in the flyers. The pertinence criteria analyzes whether each topic or item was prepared according to the public interest for which the material is intended (Cassepp-Borges et al., 2010; Hernández-Nieto, 2002). This could be observed on both flyers, where the high CVC for relevance indicated that the scientific knowledge was translated into an accessible language, capable of facilitating the target population's understanding of the information. In this way, the content of the flyers, with information on protection and prevention of COVID-19, as well as on

the pandemic stress and its psychological effects, was understood by the target population and fulfilled the objective of being able to promote well-being of pregnant women and women who have recently given birth.

In addition to the clarification concerning stress and its psychological effects and COVID-19 information, the flyers showed coping strategies to deal more adequately with stress offering suggestions on how to face the new feelings and challenges. The suggestions were elaborated as engaged strategies, as proposed by the Coping Dispositional Theory. Strategies such as "Positive Reinterpretation and growth" ("And finally, plan and organize for the arrival of your precious child, sharing this moment with your family and friends!", in the board "How to cope with COVID-19 with a positive attitude?" of the gestation flyer), "Acceptance" ("So, it is natural to feel insecure about the new routine and how to balance all the housework, work and even care for children, if you have other kids.", in the board "Social isolation and absence of your family" in the puerperium flyer) and "Planning" ("If you live with other people, it may be a good time to organize a division of home tasks. Thus, everyone will collaborate and also enjoy a time of rest", in the board "How can I cope with all of this?" in the puerperium flyer) appears on both flyers in a practical presentation accessible to the target population.

Also tips for dealing with the pandemic based on positive psychological interventions were included in the flyers, such as the use of meditation ("For those moments of feeling overwhelmed: How about chilling out and relaxing listening to your favorite music or doing breathing exercises and meditation?", passage presented on the board "How can I cope with all of this?" of the puerperium flyer) and creativity ("You can use social media to cope with social distancing and reduce your feelings of loneliness", presented on the board "How to cope with COVID-19 with a positive attitude?" of the gestation flyer). In general, considering that positive affects, such as optimism, are moderators of stress responses due to their association with high levels of engaged coping (Carver & Connor-Smith, 2010), the flyers were based on an optimistic perspective for dealing with the adversities of the pandemic. Optimism, which has been related to better subjective well-being in times of adversity (Carver, Scheier, & Segerstrom, 2010), guided the flyers' proposal, in which we sought to propose proactive attitudes to the target population to think and act to protect their health, manage stress and seek greater subjective well-being during the pandemic.

In effect, all the theoretical and scientific content, which subsidized the flyers, was carefully written in order to confer validity to all the evaluated criteria, especially the relevance. The concern with psychoeducational resources that, in fact, help pregnant and puerperal women to deal in a resilient, creative and optimistic way with the stress resulting from the pandemic was the basis for the flyers development. This seems to have been confirmed through CVC indexes  $\geq 0.80$  obtained. Based on these results, it is suggested that both flyers are psychoeducational resources that can be considered useful in the practical aspect of the experience of pregnant and postpartum women in the context of COVID-19. With the flyers, this population could be able to reinterpret their specific stressors and adopt engaged attitudes to cope with the stress caused by the pandemic. In addition, it is possible to affirm that the flyers also facilitate the development of positive affects, such as resilience, creativity, self-compassion and optimism, indicated by Positive Psychology as fundamental for the reduction of suffering and, consequently, for the improvement of life quality (Seligman & Csikszentmihalyi, 2000).

Finally, the presentation criteria, which evaluated the layout, color and organization of the flyers' content, obtained a CVC between 0.93 (gestation flyer) and 1.0 (puerperium flyer). This seems to indicate that the target population liked the flyers with regard, for example, to the content distributed in information boards, designed to provide a relaxed and easy to understand reading. This presentation resulted from the discussion among the members of the Task Force LEPIDS CONVIDa team, who together established aesthetic parameters, such as the font of the letter, color palette and disposition of information, for the construction of psychoeducational resources in accordance with the visual identity of the Task Force LEPIDS CONVIDa. Still regarding the presentation criteria, it is noteworthy that in both flyers, the stressors of the pandemic were presented, sometimes accompanied by how they were perceived or felt, other times along with coping strategies in the form of tips based on Positive Psychology interventions. All of this was presented in a layout with a format and colors chosen intentionally for each target population, which may have contributed to pregnant and postpartum women feeling comfortable in evaluating the material.

It is concluded that the whole construction process of the flyers considered the adequacy of the language to facilitate the understanding by the target population of the research contents and documents, national and international, used for the development of the materials.

This process had an initial stage of identifying stressors in scientific and technical terms, with subsequent translation into a clear, objective and accessible language for pregnant women and mothers of any socioeconomic level. It is noteworthy that the educational level of the participants was not low. As stated before, they were recruited as a convenience sample, and participants from other levels of education were not captured, which may be a limitation to attest to the content's validity.

Taking that into consideration, it is suggested that validity studies with greater heterogeneity in the sample of the target population should be conducted. In any case, it is believed that the quality of language, combined with other well-evaluated validity criteria, support the efficiency of the flyers as psychoeducational resources for the management of stress, in accordance with the specificity of the stressful context that pregnant and postpartum women have faced during the pandemic. Certainly, this even facilitated the understanding of the intervention proposal based on the chosen theoretical perspectives. Therefore, it can be said that, by the results of the evaluations by the target population, as well as by the experts, the flyers "Pregnant during the pandemic: information to know about COVID-19 in pregnancy" and "Motherhood and COVID-19: information for mothers about new routines during the pandemic" have fulfilled their goal of facilitating the coping with stress, promoting health and well-being of pregnant women and mothers of babies under six months of age, and disseminating knowledge based on scientific evidence through accessible and tangible language to the needs of the society at this point in the COVID-19 pandemic.

## Conclusion

Due to the pandemic of the new coronavirus and its effects on routine, everyone has experienced health concerns and uncertainties about the future, accompanied by feelings of sadness and loneliness. In addition, measures to control the spread of COVID-19 result in stress, an impact that is even more severe for pregnant women and women who have recently given birth, who should be a target population for prevention and management of stress. Thus, the flyers presented here can be able to help pregnant women and women who have recently given birth to identify the stressful events of this new routine and adopt strategies to deal with these feelings using simple but scientifically based tips. With medical information about COVID-19 and its prevention, as well as the psychological effects of specific pandemic stressors for pregnant and postpartum women, the flyers present practical

coping strategies, which is a product differentiator. In this way, these psychoeducational resources serve to promote mental health and guarantee the well-being of pregnant and puerperal women in the midst of the pandemic.

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