Cogitare Enfermagem

ORIGINAL ARTICLE

EDUCATIONAL TECHNOLOGY ON URINARY TRACT INFECTION FOR RIVERINE PREGNANT WOMEN: SHARED CONSTRUCTION

HIGHLIGHTS

1. Knowledge of riverine pregnant women about urinary tract infection.
2. Hygiene/care practices of pregnant women to prevent this infection.
3. Educational technology favors health education actions in prenatal care.
4. Critical reflection on the importance of the theme in health/nursing.

Paula Victória Tiribaxi Neves[1]
Ivaneide Leal Ataíde Rodrigues[1]
Alexandre Aguiar Pereira[1]
Erlon Gabriel Rego de Andrade[1]
Laura Maria Vidal Nogueira[1]
Richer Praxedes Maia[1]
Carlos Marcelo da Silva Moraes[1]

ABSTRACT

Objective: to build, in a shared way, an educational technology about urinary tract infection for riverine pregnant women in Primary Health Care. **Method:** qualitative methodological research, developed with 24 pregnant women enrolled in prenatal care at a Family Health Unit on the island of Combú, in Belém, Pará, Brazil. The data were produced in the period from February to August 2021, through individual interviews and conversation circle, and were submitted to content analysis, originating the themes to build the technology. **Results:** two thematic categories were organized, inherent to the knowledge of riverine pregnant women about urinary tract infection and their hygiene practices to prevent this grievance. The categories subsidized the elaboration of a folder, chosen by them, adding relevant information, with illustrations and easy-to-understand language. **Conclusion:** it was evidenced that the pregnant women's knowledge on the theme and health care practices need to be strengthened.

DESCRIPTORS: Urinary Tract Infections; Pregnant Women; Primary Health Care; Rural Population; Educational Technology.

HOW TO REFERENCE THIS ARTICLE:
Neves PVT, Rodrigues ILA, Pereira AA, Andrade EGR de, Nogueira LMV, Maia RP, *et al.* Educational technology on urinary tract infection for riverine pregnant women: shared construction. Cogitare Enferm. [Internet]. 2023 [cited "insert year, month, day"]; 28. Available from: https://dx.doi.org/10.1590/ce.v28i0.91241.

[1]Universidade do Estado do Pará, Escola de Enfermagem Magalhães Barata, Belém, PA, Brasil.

INTRODUCTION

Urinary tract infection(s) (UTI) is(are) defined by colonization, invasion, and proliferation of infectious agents in any part of the urinary system, constituting the most frequent type of infection in the pregnancy-puerperal cycle [1]. It promotes a potential increase in the risk of premature labor, low birth weight, maternal and neonatal sepsis, preeclampsia, and renal failure, conditions that increase the morbidity of the maternal-fetal binomial [2].

UTI is a common problem in pregnancy, with a prevalence of 20%, representing about 130 to 175 million pregnant women affected by this infection worldwide in one year [3]. This problem, which affects mainly women in urban areas, must be considered among those who live far from these areas and deserve a different look due to sociocultural peculiarities, such as in riverine pregnant women.

In the context of health care for pregnant women, preventing various diseases during pregnancy, such as UTI, requires considering the specificities that involve their care and understanding the plurality of contexts and realities of this population segment [4].

The daily life of riverbank dwellers, on the banks of rivers and under the influence of the water cycle (floods and ebb tides), imposes multidimensional restrictions, being generally deprived of basic sanitation, electricity, and health services. Health care is centralized in the urban area of the municipalities, with sporadic actions by health professionals in the communities, who travel by river [5].

It is noteworthy that riverine pregnant women differ from pregnant women in urban areas, mainly due to educational limitations of this community, which hinder economic development and, consequently, the access to consumer goods, such as food and medicines, in addition to the limitations of understanding about prevention and the health-disease process of morbidities [6]. Therefore, to qualify the health care of these pregnant women, prenatal care is an important moment to obtain information and investigate important clinical manifestations in pregnancy, contributing to verify their health conditions and meet the needs related to their well-being [7].

In this understanding, prenatal care has biological, social, and public health objectives, and the importance of nursing in this care is notorious, since nurses act in the prevention of UTI during pregnancy, with practical guidance on care with intimate hygiene, use of appropriate clothing, prevention of delayed urination, and guidance on habits of urination before sleep and after sexual intercourse [8].

The exchange of information between nurses, users, and families makes it possible to systematize the assistance aimed at health promotion and disease/illness prevention, developed through health education [9], considered a tool to qualify knowledge, attitudes, and practices [10]. Adding health education to Primary Health Care (PHC) practices is a necessary action because, from the exchange of knowledge, it becomes an act of creation and transformation of thoughts and actions [8].

In this context, to help the effectiveness of nursing care, the use of educational technologies, especially soft technologies, has been growing with possibilities of using new resources in health care practices, showing to be effective, since they help people to understand how their own actions influence their health condition [11].

Thus, considering the importance of an educational technology to mediate the nursing performance in the professional-pregnant relationship and promote the strengthening of the self-care attitude of users during prenatal care, the guiding question was formulated: what is the knowledge of riverine pregnant women about urinary tract infection? To answer this question, the objective of this study was defined as: to build, in a shared way, an educational technology about urinary tract infection for riverine pregnant women in Primary Health Care.

METHOD

This is methodological research with a qualitative approach, applicable to studies to produce, validate, and apply educational technologies [12]. The Consolidated Criteria for Reporting Qualitative Research (COREQ) guide was used to guide the research.

It was developed in the Family Health Unit (FHU) located on the island of Combú, belonging to the Combú archipelago, in Belém, Pará, Brazil. The unit is the only health service on the island and develops the Ministry of Health Programs in the context of PHC. It has a full team composed of five community health agents, one nurse, two physicians, one dentist, two nursing technicians, and one oral health technician.

Twenty-four pregnant women (75%) out of a total of 32 who underwent prenatal care at the Unit during the data collection period participated in the study. We included the riverine pregnant women registered at the FHU, in regular prenatal care, older than 18 years, regardless of gestational age and parity. Pregnant women with verbal communication restrictions and under 18 years old were excluded due to all the legal and social issues involving teenage pregnancies.

Initially, the project was presented to the FHU management for their knowledge and collaboration in its operationalization. Data collection was carried out from February to August 2021, in two stages: the first referred to individual interviews, using a semi-structured script, to identify the participants' sociodemographic and obstetric characteristics, to know their knowledge about UTI and their hygiene and care practices, to define the themes to compose the educational technology and the type to be built.

The interviews, conducted by the main author, took place when the pregnant women attended their prenatal appointments, when they were invited to participate. Those who agreed to be interviewed at the time of the approach were taken to a reserved room in the Unit itself. For those who decided to be interviewed at another time, the day and time were scheduled according to their availability. The interviews lasted an average of 15 minutes.

To close the interviews, we considered data saturation, when no new element was found, and the addition of new information was not necessary because it did not change the understanding about the object of study [13].

In the second stage, a conversation circle [14] was held with 14 pregnant women, 58.3% of the interviewees, to present them the first version of the educational technology and hear their opinion about the best way to present the themes and adequacy of the content. The conversation circle was held at the FHU itself, two months after the conclusion of the interviews and data analysis. The pregnant women were divided into subgroups to facilitate communication between them and the mediator so that they could better express their opinion about the material in question. The circumstances of the COVID-19 pandemic limited the access of the pregnant women to the Unit, which made it impossible for all of them to participate in the round, but it was understood that the participation of more than 50% was representative.

The data resulting from the interviews were analyzed using the thematic content analysis technique [15], which allowed the identification of important themes to compose the educational technology. Initially, the interviews were transcribed in their entirety for detailed reading, and then the words and theme-phrases (registration units) referring to the pregnant women's knowledge and practices about UTI were extracted from the statements, by their absolute and relative frequencies of occurrence and co-occurrence. Subsequently, these convergent contents were grouped, composing two thematic categories: "Knowledge of riverine pregnant women about UTI"; and "Hygiene and care practices of riverine pregnant women to prevent UTI", interpreted and discussed in the light of the scientific literature.

The research was approved by the Ethics Committee of a Public University, under

opinion no. 4,485,297/2020.

RESULTS

The age ranged from 18 to 37 years, with a predominance of 18 to 28 years (20/83.3%), 100% literate, 13 (54.2%) declared themselves to be brown and 18 (75%) living in a stable union. As for occupation, 16 (66.7%) were housewives. The majority (15/62.5%) said they were multiparous, and 16 (66.7%) had at least two children. Regarding the presence of UTI during pregnancy, 15 (62.5%) said they did not know whether they had been affected or had not been diagnosed during pregnancy.

The following are the thematic categories originated from the data analysis, which served as subsidies for the elaboration of the educational technology.

The first category, entitled "Knowledge of riverine pregnant women about UTI", presents the perceptions and knowledge of riverine pregnant women about this infection, based on the knowledge built in their daily lives and on experiences acquired previously or in the current pregnancy, showing that knowledge on the subject was still superficial, being mainly tied to common sense.

In this context, regarding the understanding of UTI, 11 (45.8%) participants expressed some understanding about it, however, many answers brought superficial explanations, using popular expressions, and relating only the signs and symptoms and sexual practices, not conceptualizing it clearly:

I think that urinary infection can be about the discharge that women feel, it itches, it starts to bother, and that also affects when it's time to pee. (G10)

As I never had it, I can't tell you what it is in fact, but I believe that it catches through sexual intercourse. (G7)

Still regarding the signs and symptoms, 13 (54.2%) highlighted the pain, burning, itching and discomfort generated by the infection, especially when urinating, usually associated with experiences previously experienced during previous pregnancies or in the current pregnancy:

Yes, I already had it when I was pregnant with my first child. I had a lot of pain here beneath the belly (pubic region). When I went to urinate it hurt, it stung and even a discharge sometimes, it was a white discharge and it stank. (G1)

Yes, I'm having it! I feel a lot of burning when I go to pee, a horrible agony because it is burning, and I can't sit [...] it seems that it is burning, it hurts and burns at the same time. (G19)

About the causes and means of transmission of UTI, 11 (45.8%) informed that the use of tight clothes, such as those made of jeans, the habit of going to the bathroom a few times and unprotected sexual intercourse were the main responsible for the appearance of infection during pregnancy:

I think wearing many jeans, causes it. Taking a long time to pee, without going to the bathroom, I think it causes it too. (G5)

[...] I think that sometimes you can catch it through sexual intercourse because sometimes a discharge comes out. And I think that it is prevented by using condoms. (G7)

It is noteworthy that the statements on the subject circulated among the group, since eight (33.3%) mentioned sharing their experiences with other pregnant women, showing

that this knowledge and information were passed on and socially constructed in everyday contacts:

There are many women, especially first-time mothers, who have (urinary tract infection) and don't know. There are two of my friends who are pregnant, and they are with urinary tract infection because they eat a lot of junk food, don't drink water, and I already said that (this) causes infection. (G5)

I already had it since my first pregnancy [...], and here, in our region, as there are many people badly informed, even the younger ones are not interested, there are few who seek this kind of information, I always try to talk to help. (G13)

If pregnant women shared information about UTIs within the group, the consultations held at the Unit could become an opportunity to address important issues with them, which could be assimilated and shared. In this context, nine (37.5%) mentioned that the issue had already been addressed with them at the Unit, but it was observed that it needed to be strengthened:

At the Post (Health Post), they had already told me about it, but I don't know how to tell what exactly urinary infection is, nor how does the person get it. (G19)

Sometimes they talk, we have meetings and gatherings of pregnant women, so if you bring up a subject, the person will already have that in mind, that knowledge. (G14)

As for the second category, called "Hygiene and care practices of riverine pregnant women to prevent UTI", it is presented that, although the knowledge of these pregnant women was weakened, hygiene and health care practices were part of their routines, even when performed for other purposes and not intentionally to prevent UTI. However, these practices also needed to be strengthened.

That's because, when asked about hygiene habits after urinary and intestinal elimination, the answers were different among the participants, predominating, in 100% of the statements, their own ways of practicing intimate hygiene, according to their beliefs and knowledge:

I wash myself, sometimes, with apple cider vinegar because I have urinary infection frequently. So, every time I go to pee, I feel a little pain in this region. [...] I dissolve apple cider vinegar in water to wash myself because they told me it is good, and I also use intimate soap. (G4)

I do, with intimate soap! I don't clean myself with toilet paper, I wash myself. Furthermore, I dry myself with a towel, I have a towel specifically for this. (G18)

Regarding the practice of sexual intercourse during pregnancy and the use of condoms, 12 (50%) said they performed safely or stopped after the discovery of pregnancy, for fear of affecting their health and that of the baby:

I only had it once after I got pregnant, and I used a condom, but then I went to the bathroom to clean myself, showered with intimate soap, and to dry off I used a towel. (G16)

I did not have sexual relations after I got pregnant. But I think it is important to protect yourself to prevent diseases, for your safety and that of your baby. We know that condoms prevent this. In fact, it is the means that prevents more than taking medicine because if you take the medicine and don't use a condom, you run the risk of catching a transmissible disease. (G13)

About the care with underwear, 22 (91.7%) stated care with proper cleaning and frequent change of underwear because they understood that this behavior was necessary for proper hygiene during pregnancy:

I wash and put powdered soap on, then I take a little bit of the soap off and throw a little bit of alcohol on my underwear. And I don't like to spread it out where it doesn't get sunlight because they say it's not good. (G2)

As I go peeing, especially now that I am pregnant, I go washing and changing. I don't wear the same panties because I think they are a little 'piggy'. (G5)

For 13 (54.2%) participants, the climatic conditions of the environment where they live, with strong heat and high humidity, associated with the changes suffered with pregnancy, required them to take extra care, especially regarding the frequency of bathing, washing the intimate region, and changing clothes:

At the very least, it's three times a day! It depends on the heat, when it's very hot, I take a shower and I can't even wear the same clothes. And it seems that during pregnancy the heat is greater. (G3)

Almost every hour! I wake up, take a shower and change [...], because it is very hot, especially here in our region. So, I take a shower about five times a day. (G17)

It is noteworthy that 10 (41.7%) said that many guidelines passed on by health professionals at the Unit have become practical actions in their daily lives, reinforcing the importance of addressing such issues during the professional-client contact, so that these pregnant women transform knowledge into actions:

I wash manually, alone! I usually use soap, I don't use softener because once I went to use it, and it was itchy, then the nurse said I shouldn't use softener. (G12)

I felt a lot of pain, and when I went to pee, I peed very little. Then I went to the doctor, I told him what I was feeling, and he said that I had this (urinary tract infection). After he talked to me, I am usually changing a lot (referring to underwear) because I am taking many baths, about four times a day. (G15)

In this sense, 11 (45.8%) mentioned that they would like to be more enlightened and better oriented by the health professionals at the Unit because they still had many curiosities and doubts about UTIs, reinforcing the importance of health education for them:

Talk about how the person can get an infection, and when the person goes to the bathroom and feels a 'little burning' when it's time to pee, then takes a medicine and doesn't know what it is. Explain that the person should go to the doctor to know whether it is an infection or not because, generally, the person feels it and goes to take a medicine, then it doesn't go away, goes and takes another one. (G18)

It would be good to discuss prevention, this is significant! Because everyone knows that not only pregnant women have it, but we have it more easily. (G12)

Based on the results of the interviews and the conversation circle, the contents to be approached were defined, and the educational technology was developed, considering the participants' suggestions. Thus, the themes referred to the concepts and types of UTI, signs and symptoms, risk factors, complications during pregnancy and the importance of prevention during pregnancy.

As for the technology itself, the participants highlighted the importance of being a printed material with simple language, enabling them to take it to their homes and consult it whenever necessary. With this, 12 (50%) highlighted that, based on the suggested themes, the educational technology could contribute to disseminate safe information about the disease, the signs and symptoms, the causes, and the means of prevention:

It would be cool something to bring home, for sure! Because at the health center you won't have that privacy, and at home you will have it, it's better, 100%. To talk about how you get it, what you feel, and about prevention. (G12)

I think that the best thing would be something for us to bring home because we can't always afford to be at the Unit. Generally, we only go when we schedule an appointment. So, it is easier, and if you have material that you can read, it is better. [...] I believe that there should be more (content) about prevention, how to avoid, the correct way to wash, a step by step. (G13)

Based on the suggestions, a folder was prepared, adding relevant information, with illustrations and easy-to-understand language. After its construction, the first version of the educational technology was presented to the participants through a conversation circle. On this occasion, the pregnant women were gathered in a room of the Unit for the round and to get to know the educational technology. It is noteworthy that, for this, all care was taken regarding health standards to prevent COVID-19.

The educational technology was presented to all of them in a printed version, and they were asked to give their opinions about the format, information and illustrations it contained. The pregnant women approved the content and the other particularities, such as the order of the information and images, judging them sufficiently clarifying and necessary.

From then on, the final version of the folder was organized, called: "Do you know what is urinary tract infection during pregnancy? Come on, I'll tell you!" (Figures 1 and 2), presented in couché paper, with two folds, size 304.0 mm x 216.0 mm. The titles are presented with *Meutas Bold, Extra Bold* and *Semi Bold* fonts, varying in font size from 13 to 27, and the texts with *Meutas Light* and *Extra Light* fonts, varying from 11 to 12.

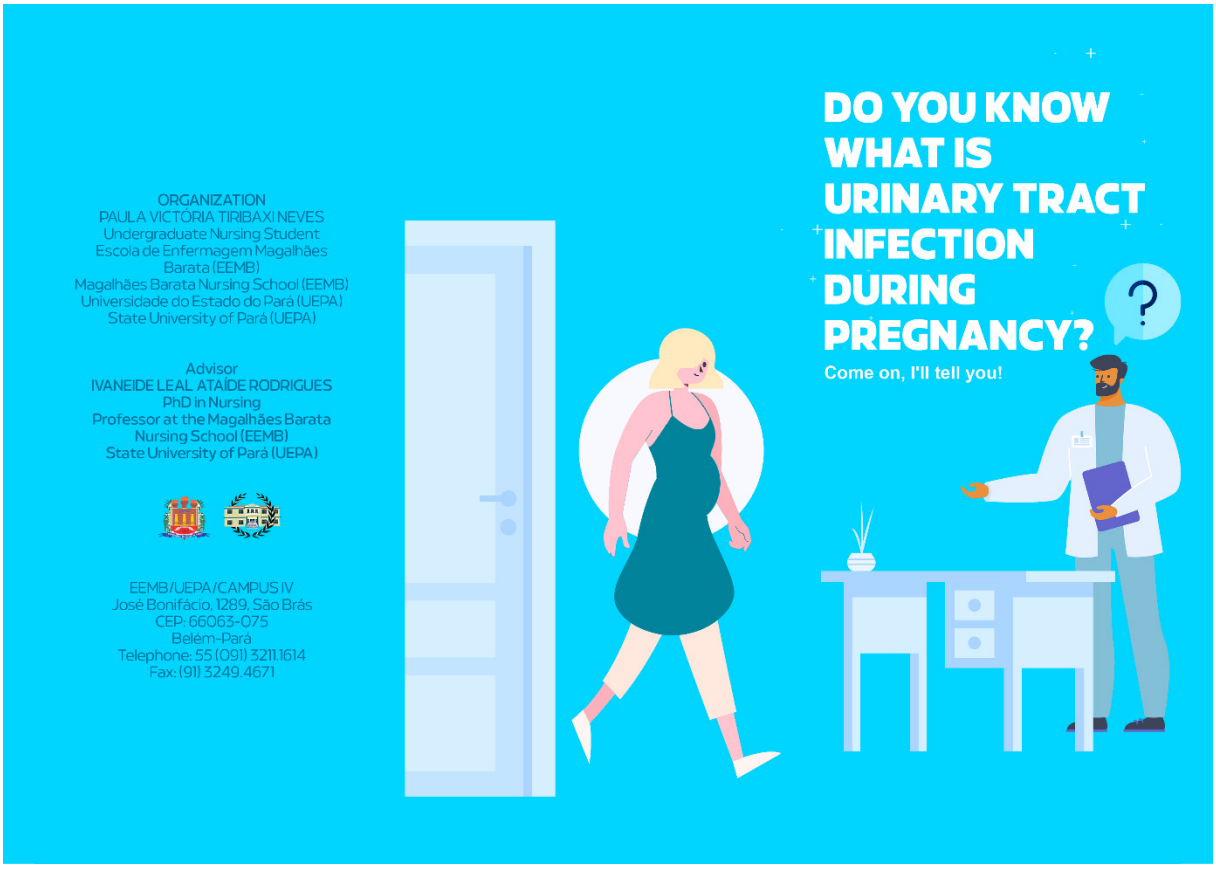

Figure 1 - Cover of the folder. Belém, PA, Brazil, 2021

Source: The authors (2021).

Figure 2 - Text of presentation of the folder. Belém, PA, Brazil, 2021

Source: The authors (2021).

It consists of a cover and a page with internal content, consisting of six topics related to the most recurrent doubts of the participants in relation to UTI: What is urinary infection? Would it be possible to "catch" a urinary infection? What are the risk factors for having urinary infection? What are the complications during pregnancy? How can I prevent it? And the most common symptoms. It is noteworthy that the content was built to fit the reality of pregnant women, opting for the insertion of allusive drawings to the texts, and poly chrome was used to highlight information.

DISCUSSION

The results showed that knowledge on the subject and hygiene and health care practices need to be strengthened because they are associated with the common sense of the group, the current or previously acquired experiences, and are built and shared through daily contacts between pregnant women. Thus, the need to develop an educational technology that could offer relevant information to pregnant women living on the riverine was reinforced.

Historically, rural, and riverine populations worldwide are deprived of favorable conditions to improve their quality of life, including access to education, health, drinking water, and sanitation. They have a strong female population and low education, with fishing and agriculture as their main economic activities, culminating in family incomes of less than one minimum wage [6,16].

Lower levels of education and socioeconomic conditions, common characteristics of riverine populations, are significant risk factors for the occurrence of UTI [17-18]. Moreover, poor diet, inadequate water intake, primiparity, and indiscriminate use of antibiotics, together with low maternal education, may be associated with higher rates of this infection during pregnancy [19].

Understanding the severity of complications, signs and symptoms, and the costs of UTI treatment is a relevant mechanism to promote women's attitude to understand the importance of preventive care during pregnancy. For this reason, knowledge about the disease is not enough; the assimilation of information and attitudes also plays a fundamental role in preventive actions [20].

In this sense, a hospital morbidity survey on hospitalizations for conditions sensitive to PHC in pregnant women and factors associated with prenatal care found that about 43% of maternal hospitalizations were due to UTI, associated with incomplete registration in the prenatal care card, late initiation of prenatal care, insufficient number of consultations, inadequate clinical evaluation, and negative perception of the care offered [21].

Given the significance of UTI during pregnancy, effective practices to prevent infection should include the way of dressing, eating habits, urinary and hygiene habits, as well as habits related to sexual behavior. Thus, the application of strategies for empowerment is essential for the improvement of the health and quality of life of pregnant women, and health education is a strengthening component of preventive behaviors [19].

This fact was corroborated in the international context, in which the knowledge of pregnant women about UTI and its prevention was consolidated based on health education activities, which reinforced the importance of personal hygiene, increased fluid intake, consumption of probiotics and foods rich in ascorbic acid, reduced intake of carbonated beverages, adequate washing of the genitals and underwear, and use of condoms during sexual intercourse [22], elements that were also highlighted in the findings of this study.

The proportion of women prepared for childbirth who had complications related to pregnancy is low, since maternal education had a positive effect on warning about gestational complications. Therefore, it is essential to use means that enhance the educational level of these women, also strengthening the likelihood of seeking maternal and prenatal health services [23].

It is emphasized, in this perspective, the importance of developing educational materials with a cohesive structure, organized, with adequate and sufficient language for their understanding. It is necessary that the content maintains the focus on the proposed subject, and that its texts present a logical sequence, starting from the most general contexts to the most specific issues [24].

In health interventions for any group, one should consider, in a contextualized way, the amount and type of information that the target audience wants or needs to feel informed and encouraged to change practices. Written materials with easy-to-understand language, such as folders, can expand the development of skills for adherence to conducts of prevention and treatment of various diseases [25].

Care based on integrality, centered in the person, and that values individual needs should guide the logic of actions in PHC. Care requires the adoption of a work process that incorporates and links the practices of care and management to the characteristics and situations peculiar to the community in a given geographical territory under the responsibility of the health team, strengthening care actions [26].

Dialogizing with these reflections, it is appropriate to highlight that the guidance to pregnant women about their self-care favors the prevention of injuries to the mother-child binomial. Pregnant women must be welcomed during prenatal care to expose their fears, doubts, and concerns about pregnancy and its possible complications [27].

Moreover, giving voice to riverine women can favor a better understanding of health issues and lead to a more accurate understanding of interventions needed to expand and/or strengthen access to specialized care in pregnancy, allowing a proper understanding of the reasons that weaken the knowledge and practices of these women to generate qualified care, especially in the context of PHC in rural areas [28].

As a limitation of this study, we point out the exclusive participation of riverine pregnant women, since the answers of these women and their interest in the educational technology may be different from those of pregnant women in urban areas, since knowledge and practices are directly influenced by sociocultural factors.

FINAL CONSIDERATIONS

It was evidenced that pregnant women's knowledge on the subject and hygiene and health care practices need to be strengthened, with the possibility of accessing technically correct information in a simple way, like the educational technology developed with their participation. Regarding health education actions in prenatal care, the folder fits as a facilitating tool for health professionals, especially in the nursing area because it is an educational material built in a shared manner.

It is expected that the findings of this study will mobilize reflections about the understanding of riverine pregnant women about their health conditions, self-care, and prevention of possible diseases during pregnancy. To provide the opportunity for further studies, we suggest the validation and application/evaluation of the educational technology with the target audience, to ensure its use in health education for riverine pregnant women.

ACKNOWLEDGMENTS

The authors thank the National Council for Scientific and Technological Development (CNPq- in Portuguese) for funding the research code 001.

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Received: 25/08/2022
Approved: 08/02/2023

Associate editor: Dra. Claudia Palombo

Corresponding author:
Paula Victória Tiribaxi Neves
Universidade do Estado do Pará
Avenida José Bonifácio, n° 1289, São Brás. CEP: 66063-075. Belém, PA, Brasil
E-mail: paulavictoria541@gmail.com

Role of Authors:
Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Neves PVT, Rodrigues ILA, Pereira AA, Andrade EGR de, Nogueira LMV, Maia RP, Moraes CM da S**; Drafting the work or revising it critically for important intellectual content - **Neves PVT, Rodrigues ILA, Pereira AA, Andrade EGR de, Nogueira LMV, Maia RP, Moraes CM da S**; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Neves PVT, Rodrigues ILA, Pereira AA, Andrade EGR de, Nogueira LMV, Maia RP**. All authors approved the final version of the text.

ISSN 2176-9133