CONDUCT OF NURSES ABOUT THE ZIKA VIRUS IN THE PRENATAL CONSULTATION

CONDUTAS DAS ENFERMEIRAS SOBRE O ZIKA VÍRUS NA CONSULTA PRÉ-NATAL CONDUCTAS DE LAS ENFERMERAS SOBRE EL ZIKA VIRUS EN LA CONSULTA PRÉ NATAL

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ABSTRACT

Objective: to identify the knowledge of nurses to care for pregnant women in Family Health Strategy units regarding the prevention of Zika virus infection. **Method:** qualitative, deductive, descriptive, exploratory study with 13 nurses. For data collection, the semi-structured interview and the data analyzed, by the Content Analysis technique were used. **Results:** insufficient knowledge was identified for the care and needs of educational and assistance actions to pregnant women to prevent infection by Zika virus. **Conclusion:** it was evidenced that the nurses need a better preparation to attend the pregnant woman in face of possible infections related to the Zika virus, thus verifying the need for training to improve their educational and assistance actions in the prevention and treatment of Zika virus infection. This study contributes to identify the needs of the nurses regarding the care given to pregnant women in relation to the Zika virus to improve the care provided to this population. **Descriptors:** Family Health Strategy; Obstetric Nursing; Pré-natal care; Knowledge; Zika Virus.

RESUMO

Objetivo: identificar o conhecimento das enfermeiras para o atendimento das gestantes em unidades de Estratégia de Saúde da Família referente à prevenção da infecção por Zika vírus. **Método:** estudo qualitativo, dedutivo, descritivo, exploratório, com 13 enfermeiras. Para a coleta de dados, foi utilizada a entrevista semiestruturada e os dados, analisados pela técnica de Análise de Conteúdo. **Resultados:** identificou-se conhecimento insuficiente para o atendimento e necessidades de ações educativas e assistenciais à gestante para a prevenção da infecção por Zika vírus. **Conclusão:** evidenciou-se que as enfermeiras necessitam de um melhor preparo para atender a gestante diante de possíveis infecções relacionadas ao Zika vírus, verificando, assim, a necessidade de capacitação para a melhoria das suas ações educativas e assistenciais na prevenção e tratamento da infecção por Zika vírus. Este estudo contribui para identificar as necessidades das enfermeiras quanto ao atendimento à gestante em relação ao Zika vírus para uma melhoria do atendimento prestado a essa população. **Descritores:** Estratégia Saúde da Família; Enfermagem Obstétrica; Cuidado Pré-Natal; Conhecimento; Zika Vírus.

RESUMEN

Objetivo: identificar el conocimiento de las enfermeras para la atención de las gestantes en unidades de Estrategia de Salud de la Familia referente a la prevención de la infección por Zika virus. **Método:** estudio cualitativo, deductivo, descriptivo, exploratorio, con 13 enfermeras. Para la recolección de datos, se utilizó la entrevista semiestructurada y los datos, analizados por la técnica de Análisis de Contenido. **Resultados:** se identificó conocimiento insuficiente para la atención y necesidades de acciones educativas y asistenciales a la gestante para la prevención de la infección por Zika virus. **Conclusión:** se evidenció que las enfermeras necesitan una mejor preparación para atender a la gestante ante posibles infecciones relacionadas con el Zika virus, verificando, así, la necesidad de capacitación para mejorar sus acciones educativas y asistenciales en la prevención y tratamiento de la infección por Zika virus. Este estudio contribuye a identificar las necesidades de las enfermeras en cuanto a la atención a la gestante en relación al Zika virus para una mejora de la atención prestada a esa población. **Descriptores:** Estrategia Salud de la Familia; Enfermería Obstétrica; Cuidado Pre-Natal; Conocimiento; Zika Virus.

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INTRODUCTION

Nowadays, Brazil has been presenting a major public health problem in relation to the incidence of *Aedes Aegypti* mosquito infection, being found, in Brazil, for the first time, around the 17th century from South Africa, on slave trade ships. Two centuries later (1849-1850), with this Oswaldo Cruz created the "Mata-Mosquito Brigades" and Brazil was considered a free country of *Aedes Aegypti*. However, the mosquito was not eradicated throughout the American continent.¹

Taking into account the *Aedes Aegypti*, as a Public Health problem, 35 years has passed and there has been an intensification of the viral circulation process, with explosive epidemics that, currently, severely hit the Brazilian regions.²

In addition to Dengue, the *Aedes aegypti* mosquito also transmits two other diseases, Chikungunya and Zika virus, which, in the early stages, may be very similar, but, with some changes in their symptoms that are differentiated after laboratory evaluation by identifying the causative virus, which is different for each of them. Zika virus-related microcephaly is a new disease that is being described for the first time in history, based on an outbreak that has been occurring in Brazil since the year 2015. This outbreak is characterized by the occurrence of microcephaly with or without other microcephaly alterations in the Central Nervous System, in children whose mother has a history of Zika virus infection during gestation.³

Public health prevention measures for Zika virus vector control encompass basic sanitation, eliminating outbreaks in homes and common areas. It is necessary to reduce the accumulation of solid waste through urban cleaning campaigns in areas where collection is not regular, and to implement vector control by physical, biological and chemical methods, with the involvement of families and communities.⁴

Aedes albopictus also has potential for Zika virus transmission and, due to its wide distribution, vector control is the main weapon with the spread of this disease. The identification of the virus in amniotic fluid is of the utmost importance because of the risk of damage to the embryo. Identification of the virus in urine, breast milk, saliva and semen may have a practical effect only in

the diagnosis of the disease. Therefore, it does not mean that these pathways are important for the transmission of the virus from one individual to another.⁴

The Basic Health Network should be the main gateway for the pregnant woman, who becomes indispensable the role of the nurse in prenatal care, through the guidelines that are appropriate, always providing a humanized assistance and focusing on the National Policies of Primary Health Care.⁵

The study was justified to identify the knowledge and behaviors of the nurse in the prenatal consultation in units of Family Health Strategy to attend the pregnant women with the possibility of infection by the Zika Virus, besides contributing to the development of a Nursing care pregnant women, puerperal women with newborns with microcephaly and / or central nervous system disorders, are in agreement with the protocols of the Ministry of Health, Health, in addition to collaborating to instrumentalize the professionals of health services of reference in the treatment and the flow of care needed for this population.

The study of the relationship between the presence of Zika Virus and the occurrence of microcephaly is innovative in the national and international literature, as well as the understanding of the real Brazilian situation that evidences the needs of implementation and adequacy of the surveillance actions in future epidemiological scenarios, with adequate commitment of the professionals to contribute socially to the population of live births at a time when the country is living an epidemic by infection of the Zika Virus.

OBJECTIVE

- To identify the knowledge of nurses to care for pregnant women in Family Health Strategy units regarding the prevention of Zika virus infection.

METHOD

Qualitative, deductive, descriptive, exploratory study developed in the Family Health Strategy Units, which perform a prenatal Nursing consultation in a city in the Southern Region of the State of Minas Gerais, with a population of 13 nurses who met the following criteria of Inclusion: to be a nurse responsible for an FHS Unit; to perform low-risk prenatal Nursing consultation and not to be on vacation or

away from work, besides accepting to participate in the study by signing the Informed Consent Form (ICF). The ethical aspects applied to research with human beings, legislated by Resolution CNS 466/12, were respected. The identities of the nurses, as well as the FHS units, were preserved, in accordance with this Resolution.

To collect the data, we used the semi-structured interview, that was recorded by means of smartphone and, later, transcribed in its entirety and analyzed by the Content Analysis technique, in the Categorical Analysis modality. The data collection only started after authorization from the Municipal Health Department (SMS) of the municipality under study, as well as, receiving the approval of the Research Ethics Committee (CEP) of the Federal University of Alfnas, via Plataforma Brasil, under the opinion No. 1,854,350 and CAAE: 62334816.6.0000.5142.

RESULTS AND DISCUSSION

♦ Characterization of nurses working in prenatal care

The study population, in its total (13), was composed of female professionals. A variation of the age of 31 to 60 years was observed, prevailing the majority with age group between 31 and 40 years.

Five (35.7%) reported that they completed nursing graduation between 2001 and 2010, eight (57.1%) worked for ten years or less as a nurse and none of them acted as nurses. professional nursing technique. It is possible to infer that, between those years of the decade of 2000, the arbovirose that predominated was the dengue, with that, it is possible to affirm that the subject Zika virus was not approached in the period of graduation of the nurses, then, these, in turn, graduated without foundation for the said topic.

When referring to the professional experience in the FHS, nine (64.3%) have been working for ten years or less in this area and 13 (100%) work on a weekly workload of 40 hours, according to hiring by the Municipal This is the only employment relationship of the 13 nurses.

It was also evidenced that eight (57.1%) performed training related to arbovirose, including Zika virus, but five (35.7%) denied any type of training and / or training.

The FHS has the nurse as a significant member of the multidisciplinary team, which represents a field of growth and recognition of this professional, since it is a component that acts directly in the strengthening of the Strategy as an integrative and humanizing policy in the health process.⁶

Subsequent to graduation, 12 (92.8%) of the nurses joined the specialization, and only 01 (7.2%) did not attend and did not attend any specialization and / or other type of graduate studies.

It is possible to identify that specialization in Family Health predominates among the study participants, since nine (75.1%) nurses have this title, followed by the specialization in Work Nursing, Health Network Management and Psychiatric Nursing, equivalent to one (7.2%) nurse in each of these three types of specializations.

♦ Nurses' knowledge about Zika virus in prenatal consultation

Regarding the knowledge of nurses about Zika, it is necessary to investigate the behaviors, guidelines on prevention, complications, treatment that are being adopted and offered by nurses in the prenatal consultation, regarding the infection by Zika Virus, as well as whether this performance and knowledge are sufficient to assist the pregnant woman during the gestational period, through the interviews, which were submitted to Bardin content analysis, with the inclusion of six (6) categories, which will be presented and discussed below.

♦ Conduct in the prenatal Nursing consultation, regarding the suspicion of infection by Zika virus

The nurses evidenced that, on the suspicion of infection by the Zika virus, the conduct taken, becoming established, in informal protocol, but assumed by many, the referral to the doctor, transferring the responsibility of care to this professional:

If I see that she has symptoms, I will immediately fit her into an appointment with the doctor that very day [...] he is the one who will take the actions. (Nur 01)

Usually we refer to the unit doctor. (Nur 05)

Anything was already asking for the doctor's evaluation. He is already going to the doctor urgently. (Nur 06)

It is verified, that the conducts with respect to the protocol regarding the Zika

virus, are performed by the medical professional, due to the lack of training of the nurses before the conduits in the face of the infection. According to the Women's Health Protocol, low-risk prenatal care can be performed by both the nurse, and the physician, at any stage of care for the pregnant woman, ranging from confirmation of pregnancy, through the warning signs, until birth, performing all the follow-up, that is, the nurse has legal support, to work in prenatal care, not requiring referral to another professional.⁷

Some nurses already begin the research by the infection, through request of laboratory and clinical exams, and carry out the sequence to the attendance. In the face of suspicions of infection, the notification to the epidemiological surveillance has been performed, as evidenced:

We will see the symptoms, ask for a blood count first and then I communicate to the surveillance because they are the ones who take our doubts and tell us what our steps should be taken. (Nur 02)

We actually see if she is infected, if she is making the notification, and. Go to the doctor first and report the surveillance immediately. (Nur 11)

The request for examinations and / or analysis of the same, also protocol conduct, has been carried out, and it is verified that the nurses are aware of the importance of requesting laboratory tests, giving a greater emphasis to the serology:

We ask for a blood count first. (Nur 02)

Examinations, I will make the notification and I will forward to take examinations. (Nur 04)

So, there I do not ask, who asks is the doctor, he will ask for the serology. (Nur 04)

We'll have to ask for serology for her. (Nur 08)

Also take the exam, it looks like you have an exam that identifies whether it is the Zika or not. You have to do it if I'm not mistaken in five days. So I do not know his name to tell you, I know he has a specific test for serology for Zika [...] It's [...] and it seems like five days before it was a type of exam, now it's another, a quick test is not it? (Nur 11)

The conduct for the confirmation of the diagnosis of Zika virus infection is requested by the physician for the specific serology, and it is necessary to collect 10 ml of peripheral blood without anticoagulant, the first collection being three to five days after the onset of symptoms and second collection after two to four weeks of the

first collection.⁸ However, in the speeches described above, there is some insecurity regarding care and an incomplete knowledge of the protocol, which may impair the early diagnosis of the infection.

A single nurse reported that, in the absence of characteristic symptoms, it is not possible to provide care, but that a specific symptomatology is necessary:

Yes, because it is [...] if you do not have well defined and defined symptoms, you can not do anything. (Nur 02)

Infection with Zika virus has very common symptoms, such as low fever or possibly absence of fever, arthralgia, myalgia, headache and conjunctival hyperemia. However, maculopapular rash is a more specific sign, but attention should be paid to signs and symptoms, in general, for effective care.

It is verified that a detailed physical examination becomes essential for the practice of the nurse, identifying the symptoms so, as to be able to perform the proper protocol procedures:

Look, the first thing we do is physical examination, anamnesis, seeing everything. We do the tie test, to see if it is not dengue, to rule out dengue, we do the physical examination: look at the throat, look at the ear, to see if it is not infection, to see if it is a throat infection. (Nur 03)

It is, because it is cephalo-caudal, so, for Zika, Dengue and Chikungunya will look at this, joints, edema, blemishes, pruritus, temperature this is what I will prioritize. (Nur 04)

But what we observed a lot was the question of uterine height to see the development of the child, to see if it was within the expected, we watched our eyes, in a matter of [...] although we did a little of confusion with the Chikungunya because of that redness, the conjutivite, right?! (Nur 10)

It may also be noted that they are concerned not to confuse the type of pathology, but, some have a broader knowledge to discern Zika virus infection from other pathologies. The importance of the detection of signs and symptoms for the differential diagnosis, to the exclusion of other diseases, such as Dengue and Chikungunya, is verified. And perform propaedeutics for acute exanthematic infections that may compromise the fetus such as toxoplasmosis, rubella, and syphilis, for example.⁸ Signs and symptoms that are associated with Zika virus are marked

exanthema and conjunctival hyperemia as evidenced:

It is[...] what most distinguishes it is the conjunctivitis that we see and [...] and the spots on the skin that it appears so very suddenly at first. (Nur 11)

The contact and the use of the protocol was evidenced as a tool to acquire knowledge and obtain adequate Nursing behavior in relation to the Zika Virus:

When it comes to answering, you have to get the protocol and read, no use. That's why I already have the protocol on the side. (Nur.04)

This observance refers to the MH proposal to promote, to health professionals and technical areas of health surveillance, general information, technical guidelines and guidelines related to surveillance actions of microcephaly throughout the national territory.⁴

In addition to the physical examination, it is also necessary to carry out the anamnesis, since it is a factor of extreme importance for the differential diagnosis:

It would be [...] to collect her history, it is [...] everything, history of where she passed [...] is all that. (Nur 05)

Questioning what areas she used to frequent, the issue of insects, if she used repellents, condom use, because the partner was responsible for the transmission, then I would approach that. (Nur.10)

Evaluate the clinical complaint right? What she is feeling, what are the symptoms. (Nur.12)

Find out first if she contracted Dengue at any time, if that Dengue was investigated, and if it was Dengue what diagnosis was given to her in the act, what period was she in the gestation?! AND[...]. ask her if she traveled to some area that was having an infection, now if she is a pregnant woman with more advanced gestational age we already ask her if she is doing prenatal care, where and what were the behaviors taken in the other service, at least that's our way. (Nur 13)

However, following these consultations, even though in an incipient way, with a few nurses adhering to all these procedures, it is observed that only two nurses spoke about orientation, as we can see below:

Guidance as to the importance of performing this serology, asking for rest, water intake [...] I think these are the guidelines that have to be given. (Nur 08)

It is advised that if she presents any symptom she should look for the unit, the nurse and the doctor, they do not need to schedule, it is to arrive and at the moment to be attended, ok? Faced with any

symptom: fever seeks unity, immediately the doctor will attend. (Nur 09)

Once again, it is evident that the pregnant woman is referred to the doctor for conducts, and the initial resolution is the responsibility of the same.

In addition to guiding the pregnant woman to seek unity, it is important to carry out the active search by conducting more frequent home visits, intensifying guidelines and, consequently, attracting them to a greater participation of prenatal consultations.⁸

The cited report strengthens, when it is evident that such professionals, do not focus on the Zika virus directly, referencing only when the pregnant woman presents some sign, symptom or complaint:

The Nursing consultation we do not focus on the Zika Virus, right? We focus on the normal prenatal visit. Eventually if she has any complaints we investigate, but she is not focused on the Zika Virus. (Nur.12)

If she has a complaint of headache, body pain, something that runs away from normal consultation, we are questioning, investigating [...] but it is not focused on the Zika Virus. (Nur 12)

This type of behavior is opposed by some authors when they present that the prenatal consultation should be considered an important moment for the accomplishment of the disease prevention with guidelines on the symptoms and preventive methods for the improvement of the health care model.⁹

Finally, a nurse pointed out the question to direct her to High Risk Prenatal (PNAR):

And through her gestational period, if it is early in pregnancy, it leads to high-risk prenatal care. (Nur 13)

However, the pregnant woman with rash should be followed in the low-risk prenatal care, Zika virus infection does not fit as a condition for referral to the PNAR service, except for the occurrence of aggravations that justify such action.³

◆ Guidelines for pregnant women to prevent Zika virus infection

Regarding the guidelines, for prevention of infection, great emphasis is placed on avoiding the outbreaks of the disease transmitter, since the transmitter of the Zika virus, like that of Dengue, is the *Aedes aegypti* mosquito. And this is what is specified as one of the orientation actions practiced by the nurses in the following statements:

Eliminate the [...] where the mosquitoes can by the egg, right?! Still water, those

guidelines even if we do it for Dengue, because it is the same as it conveys. (Nur 03)

Elimination of mosquito focus, and of course, keep the house clean, airy, avoid garbage accumulation in the house, avoid mosquito accumulation, garbage, things that may be is [...] eliminate what can lead to focus understood? (Nur 06)

Arrange the house, arrange around the house, the neighbors, thus, take out all the vessels that may be accumulating water. (Nur09)

Always be observing when it comes to stilt that it does not know what type it is, because it is very complicated to define, even if it is infected. (Nur 10)

Aedes Aegypti is proliferated in a large number of houses by means of containers that can collect water, for example, plant pots, used tires, accumulated refuse, beverage containers, blocked gutters and uncovered water tanks. It is also pointed out, that *Aedes aegypti* should be eradicated both in its immature stage, and in the adult stage at home and immediate neighborhood, in addition to other places such as schools, hospitals and workplaces.¹⁰

Nurses prioritize how to guide the use of long clothing to prevent mosquito bites. This is a concern that has been taken seriously:

In the case of an epidemic season, endemic, whatever it is, she has to be prevented, she must wear a long-sleeved blouse if she has a lot of cases. (Nur 01)

Were the robes?! The clothes, avoid getting short clothes right?! Blouse showing the belly if you have to wear a blouse has to be longer, wear jeans, wear a closed shoe and sock. (Nur 05)

Being avoiding wearing shorts, wearing more long pants, more cool long-sleeved shirt, to avoid even the sting right?! (Nur 07)

Adequate clothes because in the heat season we see a lot of women in a tank top and shorts, we advise you to wear cooler pants, a shirt that is more closed. (Nur 10)

It is possible to protect against mosquito-human contact through the use of clothing that reduces the exteriorization of the pregnant woman's skin during the day, when mosquitoes are more active, and should be chosen in territories with great potential for the development of outbreaks and, consequently, for *Aedes aegypti* population.⁷

Another method of prevention that was widely addressed by the interlocutors was the use of repellents, but, it is observed in

some statements, a certain insecurity to advise on the use of these. One has also used the knowledge of a home method for guidance to pregnant women, as can be seen follow:

Use the repellent. Right?! a natural repellent. (Nur 01)

In prevention?! Look, it's those same Dengue, eliminate the mosquito. Spending repellent, right?! (Nur 03)

Also make use of repellent, I also ask to be using the repellent according to medical guidance [...] I think that's it. (Nur 05)

Yes, the repellent, we asked the doctor to be prescribing us, to guide the group of pregnant women. (Nur 08)

We even advised a lot about using those repellents that a firefighter spoke on whatsapp, to even ward off the mosquito. (Nur.10)

If the doctor gave her permission to use the repellent (Nur. 12)

To stay somewhat more protected from Zika virus infection, it is also necessary for pregnant women to create the habit of using creams with insect repellent function. They act in such a way as to avoid the proximity of the *Aedes aegypti* and, therefore, the sting of such disease.¹¹

Repellents that are recommended for the pregnant population due to their safety, are based on n-Diethyl-meta-toluamide (DEET) and must be adequately regulated in the National Agency of Sanitary Surveillance (NASS).¹² It is verified that the professionals still do not feel safe to guide which types do not attack the pregnant woman and can be used, guiding also empirical formulas, little knowledge of its composition and that do not offer scientific knowledge as to its effectiveness and protection to the mother and fetus.

The preference to also guide the use of non-toxic products is a concern at the time of prenatal care:

If you are going to use some repellent product at home, it should be non-toxic, use something more natural, like citronella, something like that. (Nur 01)

However, in the literature, there is no certification of the effective effect nor the approval by NASS for repellents considered as natural insecticides, with citronella, andiroba, clove oil, and others.¹²

The screens of protection in windows and doors are also indicated by the nurses, thus seeking, to avoid the entry of the mosquito in the domicile of the pregnant woman:

Use a little screen in the houses, be careful with the mosquito. That's what we ask for. (Nur 02)

The nets impede the proximity between the mosquito and the human being, serving as a physical barrier for the entrance of *Aedes aegypti* and others.¹³

Avoiding endemic areas, was also cited as a means of prevention by the interlocutors, since in endemic areas, it can lead the pregnant or people close to them to contract the Zika virus:

Shifting a lot through endemic areas, where we have the largest number of cases. (Nur 09)

This orientation is assertive, since the general population, should be advised to avoid contact with endemic areas to prevent contact with the endemic risk vector.¹⁰

Searching the unit when symptoms are present is a guideline that is being used, if any changes are suspected that are suspected of Zika Virus:

And they have correctly followed our guidelines, if they present any symptoms they should immediately look for unity. (Nur 09)

And also to advise her that any symptomatology she presents as joint pains, indisposition [...] that she seeks unity to be investigating and see if she has not contracted any disease in that sense. (Nur 14)

The orientation of the search for the health service is of great importance, especially in situations that present skin rash and fever, which are the most characteristic manifestations of Zika virus infection.⁸

Even though referenced by only one nurse, the use of condoms has been understood as a protection and prevention factor to avoid infection, since there is a chance that infection by the Zika virus can be transmitted by human seme:

And we have talked a lot about using condoms for them, as I already mentioned, because the partner could also be responsible for the transmission. (Nur.10)

And always protected sexual intercourse, plus this talked to the partner, because sometimes he may distrust "But why? We never use it and why do we have to use it now? "And the pregnant woman should say" No, you can be bitten by the mosquito, have the disease, do not know and can pass to me and harm the baby and he be a microcephaly". (Nur 10)

To date, cases of Zika virus infection with transmission through sexual contact have caused infected men to their partners. Although a small number of these cases were related to hematospermia, the Zika virus was identified in the semen, opposing the blood transmission.¹¹

◆ Guidance on arbovirus complications

As for the complications on arboviruses, it is understood that there are no guidelines, it is verified, because there are nurses who do not intensify the guidelines referring to the complications of arboviruses, only it does it in the face of the complication and worsening of the situation, against an endemic or epidemic:

Look, if it is at the time, if not, in a normal consultation, people, of course, sometimes do not even talk about it, but if we are in an era, like I told you, epidemic or endemic, then I will guide yes, the People always touch on the subject, guide how to prevent, talk about risks. (Nur 01)

However, there are also nurses who have never performed guidelines for pregnant women regarding the complications of arboviruses, as described below:

I have never oriented the complication [...] it is, I am not remembering no. This I've done with the kids at school. (Nur 04)

Oh, I never [...] appear if I'm going to steer [...] because I've never picked a case. (Nur 05)

Therefore, it is necessary to work with the information related to the particular pathology, especially to Zika, its prevention, as well as, its complications, at any appropriate time in the health unit.³

Due to the absence of cases, there is, also, a lack of guidelines due to reports of difficulties for this action in a Nursing consultation, as observed:

So, I've just been in this unit for a little while now, understand? But I do. I have a bit of trouble still, just like I told you, I still have not had any training, but what you might be causing is bad training, understand? (Nur 06)

In view of this, Permanent Education is important for the professional qualification to start work or scientific and technological update of the professional, based on, the reasoning about the reality of the service and the needs that exist to improve it.¹⁴

It is understood that the realization of the group of pregnant women is an important moment also for the realization of guidelines, where the exchange of experiences establishes a relationship

between professional-pregnant, and this is what happens in some units, as can be proved by the following sentences:

In the consultation I can not guide, we guide the groups ta? (Nur 08)

We also have the pregnant groups where we talk about Zika, we were talking a lot about dengue, traditional dengue, as I told you and Zika comes as a complement to dengue and the commitments for both the fetus and the pregnant woman also. (Nur 09)

It is verified that the purpose of the groups of pregnant women is to intensify their participation in prenatal care and to fully meet, all the needs of the pregnant woman, centralizing care in the person, besides the extended clinic.³

◆ Knowledge of the complications of Zika virus infection

Microcephaly was the most frequent complication reported by nurses, caused by Zika virus infection in specific, since they are aware that this leads to a compromise of the fetus and, consequently, of the newborn. This is proven in the following sentences:

By Zika virus in the pregnant woman [...] It is mainly microcephaly, what we have to prevent is this, because it affects the fetus, right? The most serious complication is that of microcephaly. (Nur 02)

So if there is complication in the woman I do not know, but I know it can lead to a microcephaly in the child. (Nur 04)

So, the biggest one is the microcephaly that [...] has to accompany the pregnant woman there, especially if they are in the first three months, then we have to follow her more closely, which I know is Microcephaly [...]. (Emphasis 11)

Headache, body spots, microcephaly associated with pregnancy. (Nur.12)

The most worrisome for us at this moment, that we guide is microcephaly right?! So we give her advice about microcephaly. (Nur 13)

Although the period of embryonic development is considered to be the most at risk for several complications, it is understood that the CNS remains susceptible throughout the gestational period. In this way, the complications of Zika virus infection during pregnancy will depend on several factors, such as: development stage of the concept, dose-response relationship, maternal-fetal genotype and specific pathogenic mechanism of each etiological agent.⁴

Some nurses cited the congenital malformation also as a complication, that

is, they did not specify only a certain complication:

I saw through a research that went on television, which in addition to poor training can cause problems in hearing, vision, understood? (Nur 06)

That there comes the mental retardation, the difficulty of the child's cognitive development, then we guide all this. (Nur 13)

Each child manifests differentiated complications, between them, being able to be of motor, neurological and / or respiratory character. Differentiated specialists will attend these children, depending on the impairment of the function occurred.⁴

It can also be observed that, in addition to specifying microcephaly and congenital malformation, the interlocutors mentioned intermittent fever as a complication of infection by the Zika virus:

What we're really worried about is infection, the fever is intermittent, okay? (Nur 09)

From the current point of view, one can consider the infection by the Zika virus as a pathology that brings cases of acute fever, self-defined in most cases and was not usually adding to complications and which leads to a reduction of hospitalization rate hospital.¹⁵

◆ Knowledge of gestational infection treatment

Recommendations for clinical management include risk classification, the hydration and the monitoring, as cases have a significant potential for complications and specific clinical measures.⁴

Thus, it is verified that the treatment, for some nurses, involves hydration, but, they demonstrate doubt when dealing with the subject:

Wow, I do not know. I do not know, but it would be hydration, I do not know (Nur 01).

Treatment [...] I've never caught a case. I know it involves hydration, but all this has to look at protocol, because it's all very new, color I do not know not. Name of medicine, everything has to look (Nur 04).

The only thing I know is that it is the same as Dengue treatment, there is no remedy that ends right?! I do not know if I have already launched a medication, to avoid even the mosquito, to rest and to take a lot of medication [...] I do not know nothing (Nur 07).

The pregnant women, may or may not present the alarm signals, it is included in

the evaluation of group B, ie, oral hydration is required immediately while awaiting the results of laboratory tests and then a medical evaluation is performed. The nurse and physician should be aware of the risks that may be related to the increase in obstetric bleeding, which may increase the risk of miscarriage and low birth weight.⁴

As for the request for exams, they will be the same indicated in prenatal, besides the specific ones for the confirmation of Zika virus. Other infections can manifest similar symptoms and also cause microcephaly, being infections that can be confirmed with the exams and the accompaniment of the pregnant woman.¹⁶

It is essential to perform the differential diagnosis of dengue and Chikungunya, and it is performed by the doctor. There is, also the collection of laboratory tests specific for Zika virus, being Reverse Transcriptase Reaction, followed by Polymerase Chain Reaction (RT-PCR), performed the analysis by means of blood collection or uroculture and serology for Zika virus.⁸

Thus, as shown below, the nurses emphasize the request for laboratory tests and the importance of the differentiation of diagnosis through the results:

Yes, the doctor will ask for exams, ask for some image examination, I do not know (Nur 01).

Take the plate test, do the blood tests, check the blood count, which we can also ask for, if we have seen that it has changed, we will refer you to the doctor, I already think it is medical conduct (Nur 03).

Performing the serology to confirm (Nur.08)

In cases of prenatal care of pregnant women with a rash under investigation for Zika virus infection, the same should be done as routine, however, there should be a greater concern with the neurological development of the fetus. Two additional ultrasonographies are recommended, with an ultrasound performed between the 20th and 24th week of gestational age and another between the 32nd and 35th weeks.⁸

In this context, the following, are the statements, that show the importance of performing the ultrasonography to evaluate the cephalic perimeter of the fetus:

Then, in the gestational period, what we hear is just the evaluation with the ultrasound to see the development of the child's head circumference, to know if he is really infected, to have notion after what would be the conduct for that child, this is

the that I know at the time saw?! I only know of the monitoring of the development of the head circumference, I am quite uninformed (Nur 10).

Accompaniment, ultrasound, instead of making three as recommended, also decreases the space of time to make the ultrasound and better accompany the child (Nur.13).

The ultrasound procedure described above should be performed specifically for pregnant women who have rashes and are awaiting the results of laboratory tests. For the confirmed cases, the ultrasound follow-up should be continued and, when negative for Zika virus, follow the ultrasound requests as recommended in the pregnant woman's prenatal care.⁸

It is still known that the treatment, in cases of Zika Virus infection in the gestational period, is symptomatic, ie, based on fever control and pain management, with paracetamol or dipyrone being used. In cases of itchy rashes, antihistamines may be used. However, the use of acetylsalicylic acid and other anti-inflammatory drugs is inadvisable due to the risk of hemorrhagic complications, as in some cases of dengue, for example.⁴

Faced with the relationship between the use of medication for treatment, the nurses demonstrate insufficient knowledge about the subject:

And taking antipyretic, I do not know if there is a treatment, but I think it does not have no treatment. The treatment would be to take medicine right?! (Nur 01).

Treatment?! Usually [...] treatment will treat the fever right?! Dipyrone. (Nur 03)

Yes, and we did not stop working, worrying, but what the treatment should be is [...] medicine for fever, pain, hydration, I believe only, especially with the pregnant woman too, right? (Nur 08)

It is [...] if you have a fever, the treatment is symptomatic only, there is nothing else to do is follow-up (Nur 02)

Look, to tell you the truth, I know the treatment itself [...] it's symptomatic, right? Then she'll have to have a [...] closer follow up. So far they have not discovered yet, no indication? (Nur 11).

The aforementioned speeches refer to the unpreparedness to attend to the symptomatology, complaints of the pregnant woman, being evident the lack of knowledge about this important pathology.

Although care for the pregnant woman and the prenatal consultation can be performed both by the doctor and by the

nurse, some nurses consider that this activity becomes almost of medical exclusivity, as shown below:

And usually, we go to the doctor, that we look, observe, see the symptom, right?! We suspect, talk to the doctor, make the reception [...] there is already medical conduct (Nur 03).

Um [...] I think [...] what treatment can not we do right?! Nurse does not, but I think to observe the symptoms, and forward to the doctor, give the first calls, I think so (Nur 03).

This vision and action of the nurses opposes what is predicted to be the competence of the nurse in prenatal care. It is observed that this professional evaluates the biological, psychological and psychosocial risks, scheduling care according to the level of risk. The nurse has knowledge for prenatal follow-up both in low-risk prenatal care, and in supplementary consultations with the specialist physician in cases of high-risk gestation.¹⁷

Finally, doubts about the treatment were shown, adequate for the pregnant woman affected by Zika virus during prenatal care. Some nurses feel certain difficulty and lack of knowledge about the subject, generating an impediment to a prenatal care by the nurse, causing the responsibility to be passed on to the physician, as shown below:

Now you got me. Oh people [...] Wow, I do not know about the treatment. You can move on to the next one. (Nur 05)

Wow, now you got me [...] I do not know how to treat, I have difficulty understood? That's why I told you the first question, the time you asked me, I said: I'm going straight to a specialist, you know? (Nur 06)

Do not know. Do not know. I believe that the treatment will be more similar to that of dengue, there is not much to do, but it is what we saw last year there, I think until this year we are more up to date on the issues, the focus this year was another, it was the yellow fever [...] (Nur. 08)

However, there is, currently no specific treatment for Zika Virus infection, but, research with clinical trials of the ZIKV vaccine is ongoing to develop antiviral therapies against ZIKV for immediate control.¹¹

♦ Insufficient knowledge for the care of pregnant women against Zika virus infection

The nurses feel insufficiently aware of how to care for pregnant women in the

prevention and treatment of Zika virus infection, linking this gap with the lack of studies on the subject and the need for a professional update, as explained below:

No, no. At the moment I studied, but I forgot everything, if I have to deal with it, I need to read, read it all over again to update me (Nur 01).

In prevention, yes, in the treatment I need to study a little more, I do not know if there has been any recent change in treatment, but what I know is that I need to take a better study. (Nur 07).

We got very attached to Dengue, so it seems that Zika, because no case has happened, then no, I do not feel totally prepared. Dengue does not lead to microcephaly, Zika already leads to a slightly greater impairment, but I do not have this preparation, I do not feel safe to guide a pregnant woman (Nur 10).

I believe that I need to go deeper because, as it is a matter that is current, new proposals for treatment emerge (Nur. 13).

We live in an era where the scientific age dominates rational knowledge, and scientific knowledge, that for many, is the only kind of acceptable knowledge. However, the scientific knowledge must be allied with the empirical knowledge in the professional nurse's role, since Nursing deals directly with human beings where it is observed a care that has a holistic vision, in which the parts are mainly interrelated.¹⁸

It is evident that it is necessary to disseminate this knowledge to these nurses and not to expect the pathology to spread in the studied region, so that skills can be traced, which can lead to incalculable losses to the mother/child binomial.

Only one nurse, among the 13 interviewees, points out that she has enough knowledge, once she takes refresher courses through the internet:

Oh, I know, yes, we are aware because we do many refresher courses on the internet (Nur 03).

This type of action, proactive, for the search of knowledge, is very important, since it stimulates the process of learning and development of knowledge and results in the improvement of the service provided to the client. With the scientific advances in the Nursing service, knowledge is increasing. So, with more knowledge acquired by Nursing professionals, the perspective is that the actions are more qualified and based on professional competence.¹⁹

Another relevant point exposed by nurses was lack of training and training. The nurses relate the lack of knowledge with the lack of training and training specific to Zika virus, six, eight and 13, emphasizing that they receive information and protocols via e-mail. However, Nur. 12 notes that it has not received any specific information on the subject. They also emphasize that they do not have time to update themselves, as evidenced in the following statements:

No, because I think we should have more training. They sometimes send it on the internet, to our informative email telling us the amount of commitment by Zika virus with the pregnant women, about the Zika Virus, as that is the Zika Virus, these things. But in this way, it is very difficult for us to be stopping to read (Nur. 06).

No, I think we should have training, be trained, in fact I think even the doctor, right? And so, we see even the obstetrician having difficulty in this (Nur. 08).

If I feel enough knowledge? Not entirely, I think I might have had more training, more knowledge of how to deal with the issue of Zika virus infection (Nur. 09).

We have not had any training yet, no more specific information from the Zika Virus to be delivered to the pregnant woman, so I think the Ministry still needs to implement (Nur.12).

The above requests are in line with what is put by WHO when it refers to Continuing Education as a process where the experiences acquired, later, help the professional to understand the important activities related to their work.¹⁴

Given this, the training process contributes to the development of new skills such as leadership, decentralized management and self-management. Capacity-building is expected to be a strategy for institutional change, a progressive and systematic achievement, dominated by educational planning and action.²⁰

As for the lack of training and training, a nurse stresses that the lack of Zika virus cases influences the knowledge about the subject, influencing the understanding of the disease:

No. From the moment you have the first case you change your entire vision, which we would probably refer you to the high risk so that you can follow (Nur 02).

But according to the literature, prenatal follow-up of a case confirmed by infection can be maintained in primary care, that is, in the primary care level. If the prenatal

care has not yet been started, it is important to schedule immediate follow-up and, in cases of ultrasonography with indications of poor fetal formation, it is recommended to refer to the PNAR.⁸ In contrast, a nurse that, although there are still no cases in the region, she notes the need to study to acquire knowledge about Zika virus:

So I'm going to be very frank, I have to study on my own initiative, man. Because it has a lot of material, then it would be my initiative (Nur. 10).

It was also verified that some nurses carry out studies as they appear the cases of diseases and the demand, as discussed below:

Ah, like the anti-rabies, I leave the sketch behind the door, if a case happens, I go there and take a look.

But we will study according to what the demand is appearing, when I appear I have already seen that I will have to study. But I am not informed, there is a lack of training (Nur 05).

These reflections refer to the need of commitment of the professional with the assistance and its population, since the scientific knowledge brings, to the nurses, foundation for the professional activities, as well as the capacity to make decisions, to acquire skills, to have initiative, responsibility and professional security as nurses.²¹

Regarding the prevention of Zika virus, a nurse emphasizes that she can provide assistance efficiently, even though she does not know much about it, but she values the communication with health surveillance, to assist her in the knowledge of pathology and in decision-making:

In prevention I think it does, you know?! Although much I do not know. Now, to lead the case later I have to get the scene and follow it, I'll call the surveillance, it's happening here, help me here [...] (Nur. 04).

Thus, it was found that epidemiological surveillance does not only act in the follow-up and study of the case and behavior of the disease, but, that assists obstetric clinical evaluation is met in all its requests and in the notification of the case.

CONCLUSION

It is verified that the performance of the nurses in the follow-up of the pregnant woman in the prenatal Nursing consultation in relation to the Zika virus is of paramount

importance, since it assures quality care, contributing to the reduction of maternal-fetal morbidity and mortality and the prevention and identification of possible congenital malformations, such as microcephaly. Therefore, it was identified that nurses still need to develop skills and abilities, both for their educational, and care actions.

Continuing education is a verified need in the nurses' statements of the units to improve care for pregnant women in the prevention and treatment of Zika virus infection in the Nursing consultation in prenatal referenced infection by Zika Virus.

However, it was concluded that it was possible to identify the behaviors that have been taken regarding the knowledge, diagnosis, prevention, treatment and complications of Zika virus infection in the prenatal consultation. When analyzing the care offered, it was noticed that, because it is a rare disease in the region and municipality studied, the nurses feel that they are not yet totally safe to attend the pregnant woman in face of possible infections. Thus, it was verified the great importance and the necessity of training them regarding the management of the infection by the Zika virus, so that they can acquire greater professional competence.

With a better preparation of the professionals, these, will consequently, have a greater knowledge regarding the prevention, treatment and complications of the Zika virus infection, better Nursing practice in the prenatal consultation in educational and assistance matters.

This study presented, as limitations, the interviews performed during working hours of the participating nurses, causing them, at times, to be interrupted by health service employees. Future research may be extended to other municipalities to verify the skills of these professionals regarding Zika virus infection in the gestational period.

REFERENCES

1. Peres AC. Aedes: ampliando o foco. Rev Radis [Internet]. 2016 [cited 2016 Apr 21];25(161):12-7. Available from: http://www6.ensp.fiocruz.br/radis/sites/default/files/radis161_web.pdf
2. Braga A, Valle D. Aedes aegypti: histórico do controle no Brasil. Epidemiol Serv Saúde [Internet]. 2007 [cited 2016 May 05];16(2):113-8. Available from: http://scielo.iec.pa.gov.br/scielo.php?pid=S167949742007000200006&script=sci_arttext&tlng=pt
3. Ministério da Saúde (BR), Secretaria de Vigilância em Saúde, Secretaria de Atenção à Saúde. Zika: abordagem clínica na atenção básica [Internet]. Brasília: Ministério da Saúde; 2016 [cited 2016 Dec 07]. Available from: <http://www.arca.fiocruz.br/bitstream/icict/15672/1/Zika%20-%20Abordagem%20cl%C3%ADnica%20na%20aten%C3%A7%C3%A3o%20b%C3%A1sica.pdf>
4. Ministério da Saúde (BR), Secretaria de Vigilância em Saúde, Departamento de Vigilância das Doenças Transmissíveis. Protocolo de vigilância e resposta à ocorrência de microcefalia relacionada à infecção pelo vírus Zika [Internet]. Brasília: Ministério da Saúde; 2015 [cited 2017 May 10]. Available from: <http://portal.arquivos.saude.gov.br/images/pdf/2015/dezembro/09/Microcefalia---Protocolo-de-vigil-ncia-e-resposta---vers-o-1----09dez2015-8h.pdf>
5. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Atenção ao pré-natal de baixo risco [Internet]. Brasília: Ministério da Saúde; 2012. [cited 2016 Aug 21]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/cadernos_atencao_basica_32_prenatal.pdf
6. Silva VG, Mottall MCS, Zeitourne RCG. A prática do enfermeiro na Estratégia Saúde da Família: o caso do município de Vitória/ES. Rev eletrônica enferm [Internet] 2010 [cited 2017 June 10]; 12(3):441-8. Available from: https://www.fen.ufg.br/fen_revista/v12/n3/pdf/v12n3a04.pdf
7. Ministério da Saúde (BR), Instituto Sírio-Libanês de Ensino e Pesquisa. Protocolos da Atenção Básica: saúde das mulheres [Internet]. Brasília: Ministério da Saúde; 2016 [cited 2017 Jan 04]. Available from: http://189.28.128.100/dab/docs/portaldab/publicacoes/protocolo_saude_mulher.pdf
8. Minas Gerais (Estado), Secretaria de Estado de Saúde de Minas Gerais. Manual Técnico de Atenção à Saúde e Resposta aos Casos de Infecção pelo Vírus Zika em gestantes, fetos e Recém-Nascidos. Belo Horizonte: Secretaria de Estado de Saúde de Minas Gerais; 2016 [cited 2016 May 23]. Available from: <http://www.ebserh.gov.br/documents/1477>

[15/0/Manual+T%C3%A9cnico_+v%C3%ADrus+Zika+-+VERS%C3%83O+FINAL+18_03_15.pdf/88ff3323-422e-4ca7-a302-f61bcb453aa8](#)

9. Barbosa TLA, Gomes LMX, Dias OV. O Pré-Natal realizado pelo enfermeiro: a satisfação das gestantes. *Cogitare Enferm* [Internet]. 2011 [cited 2016 Apr 23];16(1):29-35. Available from: <http://revistas.ufpr.br/cogitare/article/view/21108>

10. Ministério da Saúde (BR), Secretaria de Vigilância em Saúde, Departamento de Vigilância Epidemiológica. Diretrizes Nacionais para a Prevenção e Controle de Epidemias de Dengue [Internet]. Brasília: Ministério da Saúde; 2009 [cited 2017 Mar 29]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/diretrizes_nacionais_prevencao_controle_dengue.pdf

11. Sharma A, Lal SK. Zika Vírus: Transmission, Detection, Control, and Prevention. *Rev Front Microbiol* [Internet]. 2017 [cited 2017 Mar 19];8(110):1-14. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5290000/>

12. Ministério da Saúde (BR), Agência Nacional de Vigilância em Saúde. Consumo e Saúde: os cuidados na escolha e no uso de repelentes [Internet]. Brasília: Ministério da Saúde; 2015. [cited 2017 May 12]. Available from: <http://portal.anvisa.gov.br/documents/111522/2782148/Consumo+e+Sa%C3%BAd+Dezembro+2015+-+Ano+8+-+N%C2%BA+41/77746b21-2cbe-436b-94a8-e2dcd703732d>

13. Jones CH, Valladarez DB, May GG, et al. Use and acceptance of long lasting insecticidal net screens for dengue prevention in Acapulco, Guerrero, México. *BMC Public Health* [Internet]. 2014 [cited 2017 May 13];14(846):1-10. Available from: <http://www.biomedcentral.com/1471-2458/14/846>

14. Massaroli A, Saupe R. Distribuição Conceitual: Educação Permanente e Educação Continuada no Processo de Trabalho em Saúde [Internet]. Porto Alegre: SES; 2008 [cited 2017 May 13]. Available from: <http://www1.saude.rs.gov.br/dados/1311947098405educa%E7%E3o%20continuada%20e%20permanente.pdf>

15. Nhan TX, Cao-Lormeau VM, Musso D. Les infections au virus Zika. *Rev Francoph des Lab* [Internet]. 2014 Dec [cited 2017 May 15];2014(467):45-52. Available from: <http://www.sciencedirect.com/science/article/pii/S1773035X14727480>

16. Ministério da Saúde (BR), Secretaria de Vigilância em Saúde, Secretaria de Atenção à Saúde. Zika: abordagem clínica na atenção básica [Internet]. Brasília: Ministério da Saúde; 2016 [cited 2016 Dec 07]. Available from:

<http://www.arca.fiocruz.br/bitstream/icict/15672/1/Zika%20-%20Abordagem%20cl%C3%ADnica%20na%20aten%C3%A7%C3%A3o%20b%C3%A1sica.pdf>

17. Ministério da Saúde (BR), Secretaria de Gestão do Trabalho e da Educação na Saúde, Universidade Aberta do Sistema Único de Saúde. Competências dos profissionais de nível superior na estratégia de saúde da família [Internet]. Brasília: Ministério da Saúde; 2011 [cited 2017 May 15]. Available from:

https://www.unasus.gov.br/sites/default/files/competencias_profissionais_superiores_esf_normalizado_0.pdf

18. Silva DM, Batoca EMV. O conhecimento científico e a enfermagem. *Millenium* [Internet]. 2003 [cited 2017 May 13];27. Available from: <http://repositorio.ipv.pt/bitstream/10400.19/615/1/O%20CONHECIMENTO%20CIENT%C3%8DFICO.pdf>

19. Shinyashiki GT, Trevizan MA, Mendes IAC. Sobre a Criação e a Gestão do Conhecimento Organizacional [Internet]. *Rev Latino-Am Enfermagem* [Internet]. 2003 [cited 2017 May 13];11(4):499-506. Available from:

<http://www.scielo.br/pdf/rlae/v11n4/v11n4a13.pdf>

20. Ministério da Saúde (BR), Portal da Saúde. Programa Nacional de Melhoria e Acesso e da Qualidade da Atenção Básica (PMAQ) [Internet]. Brasília: Ministério da Saúde; 2013 [cited 2017 May 13] Available from:

<http://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/pmaq>

21. Domingues TAM, Chaves EC. O Conhecimento Científico como valor no agir do Enfermeiro [Internet]. *Rev Esc Enferm USP* [Internet]. 2005 [cited 2017 May 14];39(Suppl):580-8. Available from: <http://www.ee.usp.br/reeusp/upload/pdf/82.Pdf>

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