

Pregnant Women's Perception about the Influence of Physiotherapy in Prenatal and Labor in a Neighborhood of the City of Linhares-ES

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Keywords— *Natural childbirth, Cesarean delivery, Obstetric physiotherapy, gestation.*

Abstract— *Pregnancy is an important phase in the life of any woman, as it represents a complex and full of changes evidenced from conception to postpartum. In this moment of intense changes, the body changes daily bringing physical and emotional repercussions. The physiological changes in pregnancy are due to the necessary adaptations specific to the maternal-fetal complex and childbirth. Initially, the first changes are due to hormonal action and generate significant impacts on the woman's body and routine. The main changes in maternal physiology occur in the cardiocirculatory, respiratory and gastrointestinal systems, in addition to metabolic and hematological changes.*

The preparation of the body for pregnancy involves adjustments of the most varied systems, depending on a complete multidisciplinary team that will be able to offer the pregnant woman quality support to the varied body systems.

The physiotherapist is an essential health professional who works both in the prevention and rehabilitation of the population's health. The insertion of this professional in several areas of health tends to happen due to the profession evolving clinically and scientifically contributing to a large scale in the health of the individual in its entirety.

The present study is justified by the need to verify the knowledge of pregnant women in relation to the benefits of physical therapy in prenatal care and during labor. The knowledge generated from this study will serve as important support material for physical therapists and pregnant women, favoring the insertion of this professional in this area.

I. INTRODUCTION

Pregnancy is an important stage in any woman's life, as it represents a complex moment full of changes evidenced from conception to postpartum. In this moment of intense changes, the body is transformed daily, bringing physical and emotional repercussions. (SILVA, 2018)

The physiological changes in pregnancy are due to the necessary adaptations of the maternal-fetal complex and childbirth. Initially, the first changes are due to hormonal

action and generate significant impacts on the woman's body and routine. The main changes in maternal physiology occur in the cardiocirculatory, respiratory and gastrointestinal systems, in addition to metabolic and hematological changes. (QUEVEDO, 2010)

The preparation of the body for pregnancy involves adjustments of the most varied systems, depending on a complete multidisciplinary team that will be able to offer

the pregnant woman quality support to the various bodily systems. (BRANDÃO, et al, 2008)

Physiotherapy is a health science that studies, prevents and treats various functional kinetic disorders that result from alterations in the organs and system of the human body. (VALENCIO and RODRIGUES, 2015)

The physiotherapist is an essential health professional who works both in the prevention and rehabilitation of the population's health. The insertion of this professional in several areas of health tends to happen because the profession evolves clinically and scientifically, contributing on a large scale to the individual's health in its entirety. (OLIVEIRA, 2018)

One of the specialties of physiotherapy is Women's Health, whose area mainly covers urogynecology and gynecological disorders, post-mastectomy women, obstetrics and changes associated with sexuality. (PADILHA, et al. 2015)

Currently, the presence of the physiotherapist in the care of pregnant women and in labor is little observed. Not only on the part of pregnant women, but among health professionals, there is little knowledge about the role of this professional in this field, as well as the evidence of benefits in the health of pregnant women. (GOMES and OLIVEIRA, 2005)

It is observed that most hospitals and maternity hospitals still do not offer their pregnant women a welcoming and humanized obstetric care that is concerned with meeting the needs of pregnant women, respecting their individuality, desire and providing security for the family. A complete and well-educated multidisciplinary team can significantly contribute to a woman's life and her experience acquired during this period. (VELHO, et al. 2014)

In obstetrics, the physiotherapist has several techniques that contribute to the well-being of pregnant women, including the therapeutic exercise that is widely used in prenatal, delivery and postpartum work. (SANTOS, et al. 2019)

During the gestational period, this professional is indispensable, because through the assessment and monitoring of physiological changes, he is able to promote the well-being of the woman and the baby. (SOUZA, et al. 2017)

During labor, whether by vaginal or cesarean delivery, this professional is able to help the mother and baby through techniques that favor analgesia, decrease tension, relaxation and safety, making this moment more special and less traumatic. (SANTOS and OLIVEIRA, 2016)

This study is justified by the need to verify the knowledge of pregnant women in relation to the benefits of physiotherapy in prenatal care and during labor.

The knowledge generated from this study will serve as important support material for physical therapists and pregnant women, favoring the insertion of this professional in this area.

II. UNDERSTANDING THE MENSTRUAL CYCLE AND FERTILIZATION

Pregnancy is an important and complex stage in any woman's life and corresponds to the period before childbirth with numerous changes in the body, as it is constantly changing day after day. Knowing the physiological basis of these changes helps the physiotherapist in decision making for treatment, exercise prescription and identification of their role in obstetrics. (BARACHO, 2007)

For a woman to become pregnant, fertilization must take place through an encounter of a sperm with a secondary oocyte. Every month the woman's body prepares for this encounter to occur, but when it doesn't happen, an episode called menstruation occurs. (STEPHENSON and CONNOR, 2004)

Knowing a woman's menstrual cycle is the first step to understand the process of fertilization and, consequently, the process of development of pregnancy.

The menstrual cycle usually occurs every 28 days, starting at menarche and ending at menopause. Cyclic changes in ovarian function that occur monthly cause variation in the secretion of female hormones and in the structure of the inner lining of the uterus. This cycle can be divided into three phases: follicular, ovulatory and luteal. (POLDEN and MANTLE, 2005)

The follicular phase starts on the first day of menstruation with an average duration of 14 days, and can be subdivided into primordial, pre-antral and pre-ovulatory phases. At the beginning of the follicular phase, the concentration of estrogen and progesterone is still low, and as a result, the upper layers of the thick endometrium break and leak, starting menstrual bleeding. At this stage, the concentration of follicle-stimulating hormone (FSH) increases progressively, stimulating the development of many follicles in the ovaries. As the concentration of follicle-stimulating hormone drops, only one follicle continues to develop and produce estrogen. (SILVA, 2018)

In the ovulatory phase, the main event is ovulation and it occurs in the middle of the menstrual cycle, on the 14th day. The increased production of luteinizing hormone (LH) finalizes the egg's maturation, which in a few hours

will be released and directed to the fallopian tubes. At this stage, testosterone and estrogen levels are high and the woman enters the fertile period, which occurs about 2-3 days before and 2-3 days after ovulation. During this phase, it is possible to observe thicker and more elastic cervical mucus due to the influence of estrogen and LH. (BIRTH, 2013)

The luteal phase begins after ovulation due to the release of the egg and the closing of the follicle, thus forming the corpus luteum, a structure that produces large amounts of the hormone progesterone. This hormone has numerous functions such as preparing the uterus for the implantation of an embryo and causing the endometrium to thicken to favor the nourishment of the implanted embryo. (DUTRA, 2005)

When the released egg is not fertilized or when it is fertilized but cannot implant itself, the corpus luteum undergoes degeneration with a drop in the concentration of estrogen and progesterone, favoring the beginning of a new menstrual cycle. (CARLSON, 2014)

However, when the sperm meets the secondary oocyte, fertilization occurs. After fertilization the egg begins to undergo dividing processes and for approximately the next 6 to 8 days a group of cells will be fed by secretions from the fallopian tube as it is pushed into and forward from the uterine cavity. (CARLSON, 2014)

When the embryo reaches the uterus, the production of a hormone called chorionic gonadotropic hormone (HCG) starts, inducing the ovary to produce progesterone and estrogen that will favor the stability of the fetus during pregnancy. (MOORE and PERSAUD, 2008)

The pituitary gland is an endocrine gland with multiple functions, which, when receiving information about high levels of progesterone and estrogen production, stops producing the hormones FSH and LH, preventing a new ovulation with consequent suspension of the menstrual cycle. (MOORE and PERSAUD, 2008)

III. PHYSIOLOGICAL ADAPTATIONS IN THE PREGNANCY PERIOD

Knowing the mechanisms of physiological adaptations of the maternal organism during the gestational period is an excellent strategy for obstetric care and humanized care.

The various physiological changes of pregnancy involve all bodily systems with biological, bodily, mental and social repercussions that depend on adequate professional monitoring so that women feel safe and able to go through this moment. (SILVA, et al. 2015)

IV. HUMANIZED BIRTH

The humanization of health care is a continuous process and demands permanent reflection on the acts, behaviors and behaviors of each person involved in the relationship. Greater self-knowledge is needed to better understand the other with their specificities and to be able to help without trying to impose values, opinions or decisions (Brasil, 2004).

The humanization of care with a focus on women's health comes as a consequence of the construction of policies aimed at this audience. Such policies began to be thought of in the 20th century, between the 30s and 70s, specifically in the 60s the Maternal and Child Health Program (PSMI) was created, at a time when the government was still under the power of the President Getúlio Vargas. The Ministry of Health and Education were combined, and their initial attention permeated the collection of data that could express what needs this public could present and had a purely curative character. (Brazil, 2018).

According to the Aurélio dictionary, the word humanize means: To inspire, to sweeten, to smooth, to civilize, to become human, to be compassionate. The national humanization policy (PHN) aims to humanize childbirth is to rescue the role of women at the time of giving birth. The childbirth humanization program (PHNP) understands that childbirth is a complex event and that over the years it has become a medical and institutionalized matter, completely separate from family and community life. (Mônica, BM, 2010).

Special attention to labor and birth is marked by excessive medicalization, intervention methods that prove and prove unnecessary and potentially iatrogenic, and abusive practices of cesarean section. There are still issues such as the isolation of pregnant women from their families, lack of privacy and disrespect for their anatomy. Situations like this contribute to increased maternal and perinatal risks (Brasil, 2004).

The main strategy of the Program for Humanization in Prenatal, Delivery and Birth (PHPN) is to ensure improved access, coverage and quality of prenatal care, delivery and postpartum care for pregnant women and newborns, from the perspective of citizenship rights. The program is based on the right to humanize obstetric and neonatal care as a condition for adequate monitoring of childbirth and the puerperium. (Mônica, BM, 2010).

V. PERFORMANCE OF OBSTETRIC PHYSIOTHERAPY IN PRENATAL AND LABOR

Pregnancy causes a series of changes in the woman's body that are necessary for the baby's development. These sudden changes can generate pain in different parts of the body, followed by discomfort and limitations in performing activities of daily living. The physiotherapist presents himself as one of the main professionals to be sought when a woman becomes pregnant, because through obstetric physiotherapy the pregnant woman can go through the processes of changes arising from pregnancy with comfort and safety. (SOUZA, et al. 2017)

Care in obstetric physiotherapy is based on stretching exercises, breathing, relaxation, in addition to strengthening specific muscles overloaded during pregnancy, preparing the abdominal muscles and pelvic floor, and raising awareness of the pregnant woman about the physiology of pregnancy and labor. (BAVARESCO, et al. 2011)

Obstetric Physiotherapy helps patients with several common complaints of pregnancy such as cramps, shortness of breath, edema, low back pain, lumbar sciatic pain, overactive bladder, among others. With the relief of these complaints, the services provide comfort and a better quality of life for these women. (LUIS, et al. 2010)

With the increase in weight and development of the baby, the pelvic floor muscles become overloaded and, therefore, they depend on a great preparatory work so that the pregnant woman does not suffer from this discomfort and that she is also prepared for the labor, whatever it may be. (POLDEN and MANTLE, 2005)

In the case where the pregnant woman makes the choice for vaginal delivery, the physiotherapist is essential to specifically prepare the muscles in this region so that they are active and strong in the expulsive period of birth, avoiding muscle injuries, lacerations or medical interventions, as in the case of episiotomy.

During labor, it is important for the pregnant woman to know and perform exercises that favor the baby's good positioning and descent, take walks, squat exercises and with the Pilates ball to increase the diameter of the pelvis and promote the descent and exit of the fetus. Pains are also very present in labor and can be reduced through resources such as thermotherapy, massage, cutaneous electrical stimulation (TENS) and breathing exercises. (STEPHENSON and CONNOR, 2004)

The obstetric physiotherapy service prepares the body and controls the pregnant woman's anxiety, providing

unique experiences in one of the most sublime moments in a woman's life.

VI. EXERCISES IN PREGNANCY

In order for an exercise program to be started with a pregnant woman, it is necessary that she undergo a good physical therapy evaluation. This assessment will involve anamnesis to get to know the pregnant woman and survey her main complaints. In addition to anamnesis, it is necessary to perform a physical examination, which will involve static examination, dynamic examination, neurological assessment, muscle assessment, palpation and functional assessment.

Regular exercises are extremely important and recommended by the American College of Obstetrics and Gynecology (ACOG) for pregnant women, even sedentary ones, as they present benefits to global health and improve physical fitness. When they are practiced regularly and properly monitored by the professional in the area, they will have numerous benefits for the mother and baby. Pregnant women with good aerobic fitness experience the bodily changes arising from pregnancy more easily and tend to have a faster and more uncomplicated labor. (BARACHO, 2007)

For each pregnant woman, the physiotherapist will design an individualized care program that will be built according to the data collected in the evaluation, which will influence the type of exercise, frequency, intensity and duration. Some resources are used to measure the intensity of the exercise that will be proposed as verification of heart rate (HR), using the Borg Scale and Talk test. (BARACHO, 2014)

The physiotherapist must always be aware that the exercises are pleasant and safe for the pregnant woman and must do this through some precautions such as: inserting the exercises position, avoiding positions that cause gastroesophageal reflux, avoiding hot and poorly ventilated environments, guiding on the adequate food and liquid intake, avoid waltzing maneuvers and monitor vital signs. (GOMES, 2010)

Walks are indicated and beneficial when they are carried out on appropriate terrain with appropriate shoes, correct posture and harmonious muscle movements. Initially, they are done three times a week, lasting approximately 30 to 45 minutes. After a few weeks they can evolve to a period of 60 minutes, as they will improve aerobic condition, prevent excess weight and improve blood circulation. (BRANDÃO, et al. 2008)

Exercises performed in water are an excellent option for pregnant women, as they promote a relaxing

effect, allow the body weight to be better supported, reduce the impact on joints and favor the performance of ample exercises. Generally, the hydrotherapy program for pregnant women is based on aerobic and localized muscle exercises, stimulation of the respiratory system, maintenance of the pelvic floor function, maintenance of balance and proprioception, postural re-education and stretching and global relaxation. In general, hydrotherapy is indicated to be performed at a frequency of 1 to 3 times a week, lasting 45 minutes each session. (ALVES, 2012)

Exercises to strengthen the pelvic floor are recommended during pregnancy because they increase the chances that a woman will have healthy muscles after vaginal delivery. They consist of sustained contractions of the pelvic floor muscles, whether fast or slow, in different postures that promote gains in strength, endurance and improvement in the pre-contraction ability of the musculature, when in response to an increase in intra-abdominal tension. In addition to exercises, vaginal cones that recruit type I fibers (slow contraction) can be associated with training, helping to gain muscle strength as a resistance training. (SANTOS, 2018)

Perineal massages are indicated to increase the flexibility of the pelvic floor muscles and perineal soft tissue to prevent lacerations during labor and reduce resistance in the baby's passage.

O Epi-No® is a device made of inflatable silicone, connected to a pressure gauge, which simulates the baby's head to train the pelvic floor of the vagina until the time of delivery. (MENDES, et al. 2018) It was created in the 1990s, by a German doctor, to prevent episiotomy from being performed in normal delivery. It has a proprioceptive function, as it simulates the expulsive period, allowing the patient to become familiar with the time of delivery, understanding how she should act. It promotes the lengthening of the vaginal canal and, as well as perineal massage, its use is indicated from the thirty-fourth week of pregnancy and continue like this until the pregnant woman has a ruptured bag, its use being contraindicated at this time. (SILVA, 2015)

VII. METHODOLOGY

This is an exploratory and descriptive field study with a quali-quantitative approach. Exploratory for the search for knowledge of each pregnant woman interviewed on the subject and descriptive for the possibility of describing the characteristics and correlating the variables of data coming from the pregnant women about the performance of obstetric physiotherapy. For the composition of this research, there were articles, books, websites, magazines and dissertations that addressed

themes relevant to the subject discussed. The study will be carried out with women from the São José neighborhood of Linhares - ES who are pregnant during the research period. The researcher disseminated the research online to invite pregnant women to participate in the study.

Will be included in the sample 11 women, who are pregnant during the research period and who live in the São José neighborhood. Those who are interested may participate in the research by signing the Informed Consent Form (TCLE). And women who are not pregnant and who for any reason cannot answer the questionnaire or refuse to participate in the study will be excluded from the sample.

The Microsoft Forms platform will be used with a questionnaire containing objective questions through closed questions referring to the proposed theme. Participation will be voluntary, not involving risks, since no invasive or potentially harmful procedure will be applied. Pregnant women may refuse at any time to participate or fail to answer questions that for any reason is not convenient, without causing any personal harm, such freedom will be guaranteed based on CNS Resolution No. 196/96-IV.3.b .

As for the methodological instrument, a questionnaire with semi-structured questions will be used (APPENDIX A) for pregnant women, disclosed via the WhatsApp application.

The instrument will be based on specific subjects about physiotherapy in prenatal care and labor and your knowledge about it, with a total of 22 (twenty-two) objective questions.

Prior to data collection, the researcher will contact the participants to explain the research objectives, inform the ethical aspects of the study and request the signature of the Informed Consent Form present in the questionnaire and to guide the correct completion of the instrument .

It is noteworthy that the steps of this research will comply with resolution 466 of December 12, 2012 of the National Health Council of the Ministry of Health.

The data will be analyzed using simple descriptive statistics, transferred to electronic spreadsheets and tabulated with the aid of the Microsoft Excel 2016 Program. The analysis will be displayed in absolute frequency and percentages, organized in table and graph form, and discussed according to the theme in question.

The research project will be submitted for evaluation by the Ethics Committee for Research on Human Beings at Faculdade Vale do Cricaré (FVC).

In this work, we will present the results of 22 questions contained in a semi-structured questionnaire applied to 11 women from the São José neighborhood of Linhares-ES.

Regarding the women interviewed, 46% were aged between 26-35 years (FIGURE 1-A), all of them underwent

prenatal care and 73% (FIGURE 1-B) started prenatal care in the first trimester of pregnancy.

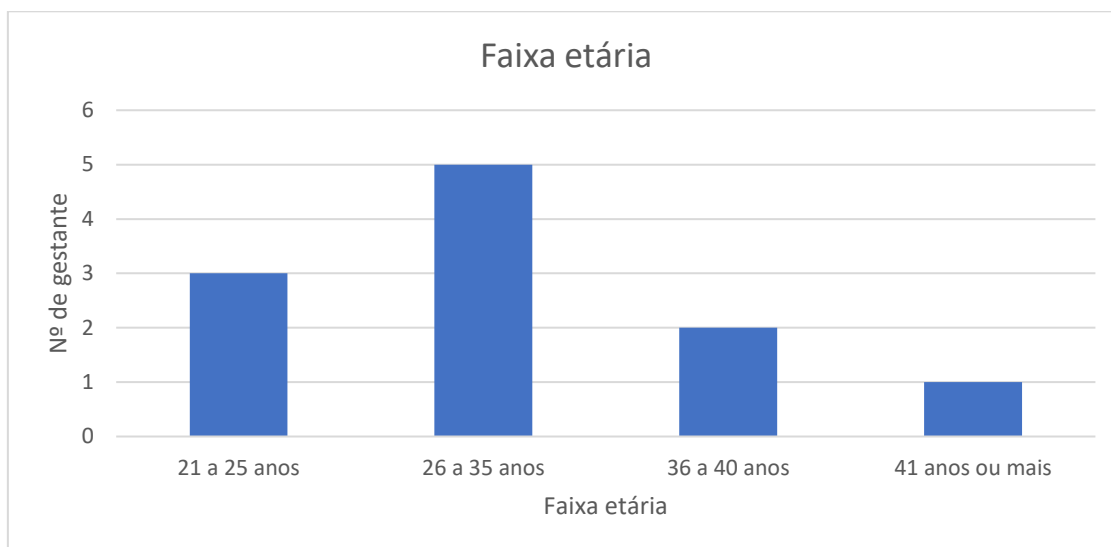


Fig.1 - A

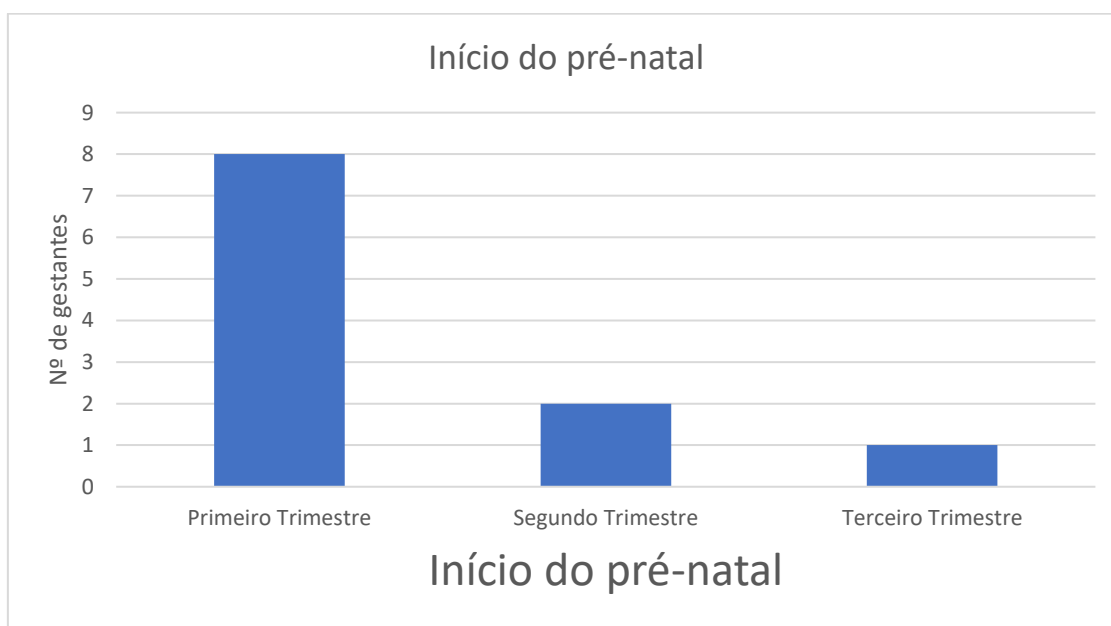


Fig.1 - B

Prenatal care is an essential factor in the protection and prevention of adverse events on obstetric health, as it enables the identification and clinical handling of interventions on potential risk factors for complications to the health of mothers and their newborns. born. (NUNES, et al. 2016)

In Brazil, the Ministry of Health instituted the Prenatal and Birth Humanization Program (PHPN) through Ordinance/GM nº. 569, of 06/01/2000, with the aim of reducing maternal and child mortality rates. With PHPN, municipalities are responsible for ensuring access to and

improving the coverage and quality of prenatal care, delivery and postpartum care, and neonatal care. (BARBIERI, et al. 2012)

It is important that every pregnant woman undergoes quality prenatal care and that this follow-up is carried out by a multidisciplinary team, so that together these professionals contribute to reducing maternal and child morbidity and mortality rates and promote satisfactory experiences for the pregnant woman during pregnancy and during labor.

Of those interviewed in the survey, 64% had already undergone physical therapy treatment during their

lifetime (FIGURE 2-A), but only 19% were seen by a physical therapist during pregnancy (FIGURE 2-B).

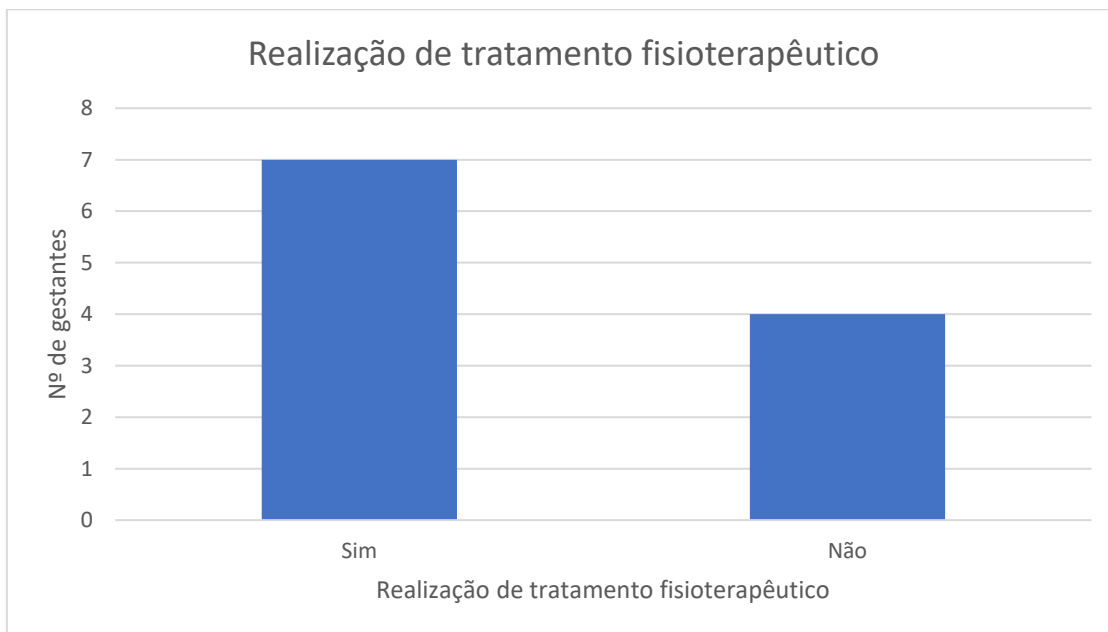


Fig.2 - A

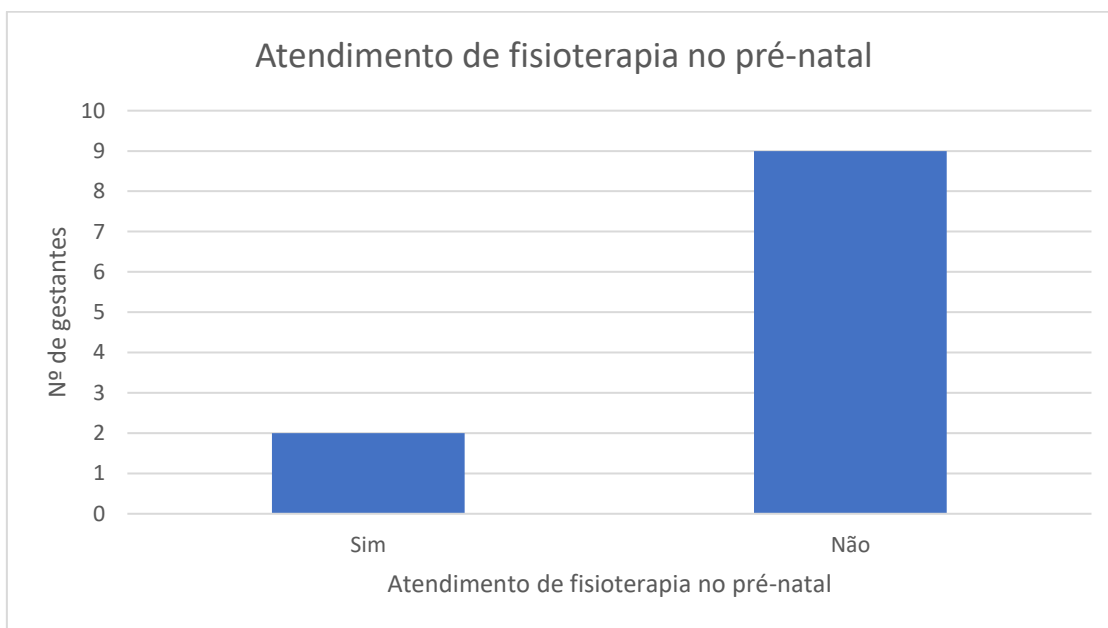


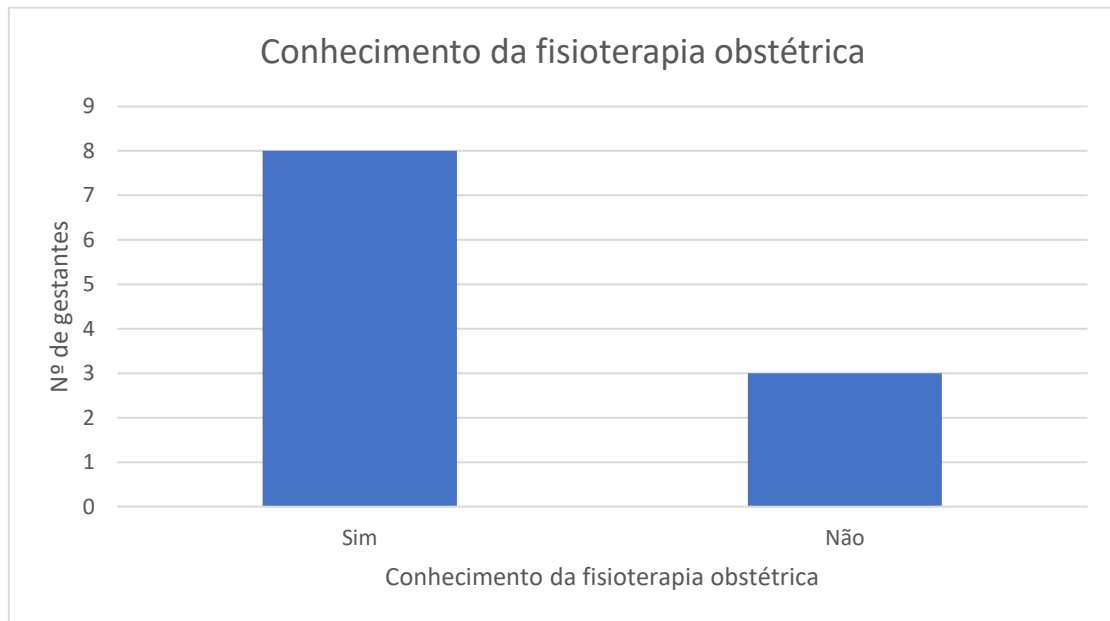
Fig.2 - B

Currently, the presence of the physiotherapist in the care of pregnant women and in labor is little observed. Not only on the part of pregnant women, but among health professionals, there is little knowledge about the role of this professional in this field, as well as the evidence of benefits in the health of pregnant women. (GOMES and OLIVEIRA, 2005)

Although the research showed that pregnant women were aware of obstetric physiotherapy (FIGURE 3), few were taking advantage of these services. What stands out is that most hospitals and maternity hospitals still do not offer their pregnant women a welcoming and humanized obstetric care that is concerned with meeting the needs of pregnant women, respecting their individuality, desire and providing security for the family. The presence of the

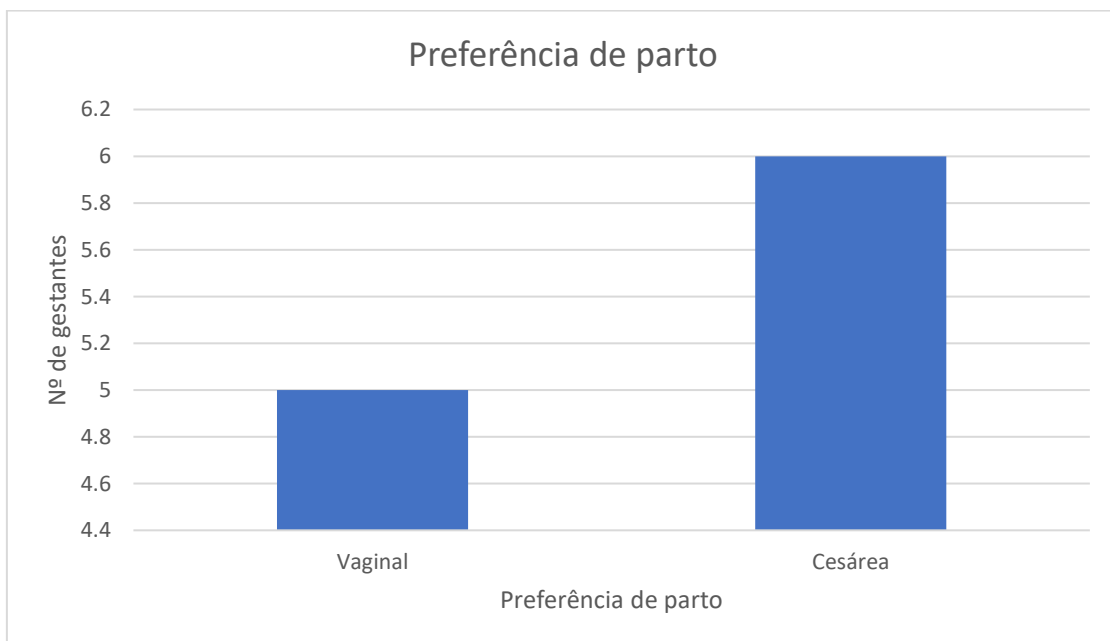
physiotherapist during pregnancy and during labor can significantly contribute to a woman's life and her experience acquired during this period, so it is important that this

professional is inserted in this context and that his/her performance is widely publicized and made available to these women. (VELHO, et al. 2014)



Regarding the preference of the type of delivery, cesarean delivery prevailed with 55% of responses (FIGURE 4). The decision about the mode of delivery is influenced by several factors such as risks and benefits, possible complications and future repercussions (COSTA, SP, 2014). These factors influence the expectations of women regarding the choice of the type of delivery, being

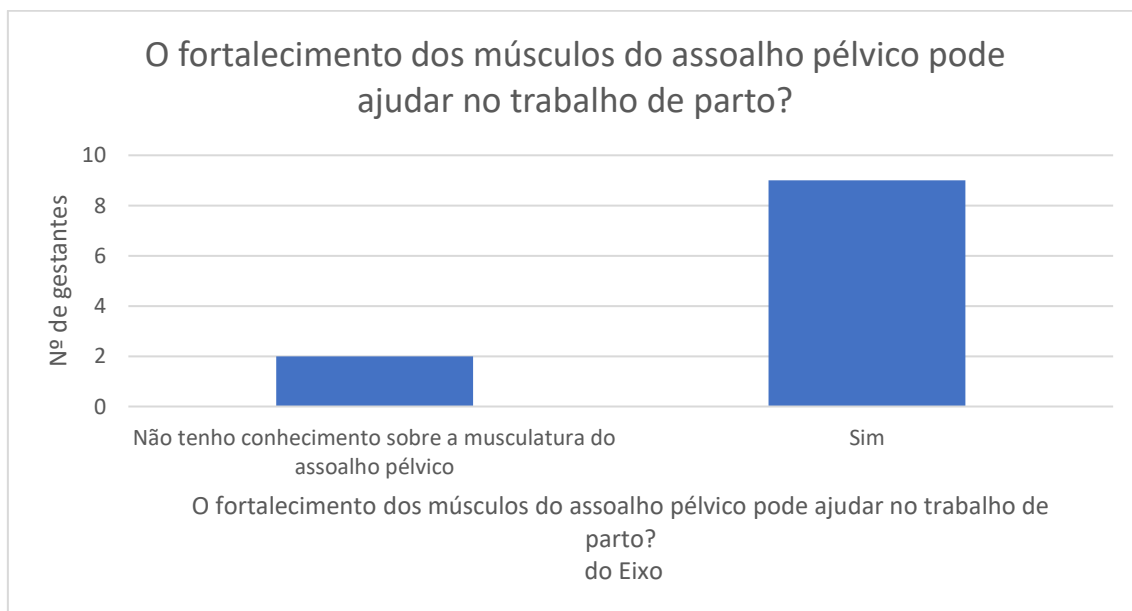
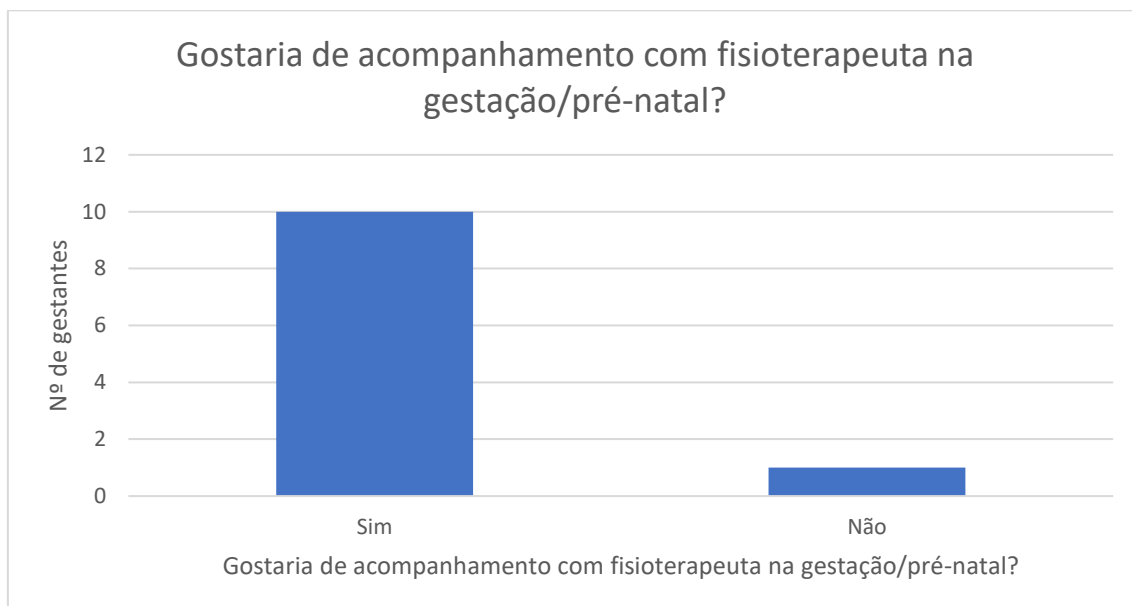
related to their knowledge about the subject and the information that is passed on by health professionals during prenatal care. The decision is due to her approach to the health professional, the culture and medical influence in Brazil, the lack of comprehensive care for women and the lack of support from professionals and family members (COSTA, 2014).



The previous experiences of the women themselves or of those close to them also end up serving as a mirror and inducing the woman to choose her type of delivery, not taking into account that each woman and each pregnancy is different, and that over the years and with insertion of new health professionals in this scenario, the woman will be able to experience the physiological

experience of vaginal birth without any problems and safely.

As for the desire to be assisted by an obstetrical physiotherapist in the prenatal period, 90% expressed the desire to be assisted by this professional (FIGURE 5-A) and 73% agreed that strengthening the pelvic floor muscles can help in labor (FIGURE 5-B).



The pelvic floor (PA) is composed of several muscles (puborectal, pubococcygeus, iliococcygeus and ischiococcygeus) and connective tissues that support the pelvic organs, control urinary and fecal continence, and contain the increase in intra-abdominal pressure. When pregnant, a woman experiences hormonal changes that

cause differentiation of connective tissues, which, when not followed up, can evolve into urinary incontinence, pelvic pain, prolapses, sexual dysfunction and lacerations during labor.

Physical therapy monitoring during pregnancy promotes the training of these muscles through selective contraction and relaxation exercises of the perineal muscles that can be stimulated by means of devices such as electromyographic biofeedback or methods such as Pilates.

The Pilates method, in addition to working the pelvic muscles, can also provide pregnant women with a complete training of the global musculature through

exercises that stimulate the various physical capacities (balance, motor coordination, cardiorespiratory performance, muscle strength and endurance, flexibility and stability) necessary for pregnant women.

In the study, 64% (FIGURE 6) of the pregnant women reported feeling pain or discomfort in the back region, which can be easily controlled through the inclusion of physical therapy in their prenatal routine.



VIII. FINAL CONSIDERATIONS

The results of this study allow us to conclude that the pregnant women interviewed have already heard about obstetric physiotherapy, they believe that it can contribute positively to labor, but most of them are not being treated by this professional.

Other studies will be needed to elucidate the factors that influence the inclusion of physical therapy in the prenatal routine and its wide dissemination in obstetrics.

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