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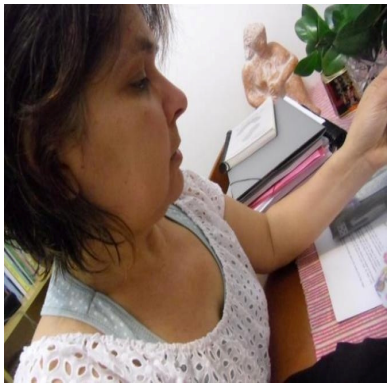

Evaluation of pre-natal care after participative training of prenatalists: before and after research

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ABSTRACT

OBJECTIVE: To analyze the indicators of pre-natal care, before and after a participative training of prenatalists in a basic health unit (UBS, in Portuguese) in Porto Alegre, Brazil, between the years of 2007 and 2009. **METHOD:** It is an exploratory study using a before-and-after experimental approach. Absolute and relative frequencies of pregnancy exams were observed, as well as pre-natal and puerperal consultation. In this test, an adjustment chi-square test was used, with a level of significance of 5% ($p \leq 0.05$). **RESULTS:** In a comparative analysis of the years 2007 and 2009, all indicators presented a significant statistical increase ($p<0.001$) in frequency, except for the percentage of blood type exam (ABO, in Portuguese) and of pregnant women with more than six pre-natal consultations. **CONCLUSIONS:** We believe that the model of participative training of prenatalists provoked some transformations of the daily practices of the professionals, which is indicated by the improvement in perinatal care.

Keywords: Obstetric Nursing, Pre-Natal; Training

INTRODUCTION

The analysis of pre-natal care in the country, and the necessity of the reduction of the indexes of maternal and neonatal morbimortality has established the proposition of this study. In this we aim to analyze the indications of pre-natal care after a participative training program involving prenatalists. The training of seven prenatalists - doctors and nurses – took place in 2008 in the Basic Health Unit (UBS, in Portuguese) "Panorama", a mixed unit situated in the Lomba do Pinheiro region on the east side of Porto Alegre, southern Brazil.

The proposal for a system of integrated pre-natal care, which is also qualified and humanized, stimulated the Brazilian Ministry of Health to create the Program for Humanization of Pre-Natal and Parturition (PHPN, in Portuguese) in June 2000. This program brings together states, municipalities and health units under the responsibility of a municipal manager to guarantee the registration and the early training of pregnant women and their adequate follow-up during the pre-natal period[1]. In the state of Rio Grande do Sul, the PHPN started between the years of 2003 and 2004.

PHPN recommends the performance of, at a minimum, six consultations during pregnancy, with the first pre-natal appointment happening prior to the fourth month. Overall, the pregnant women should have one consultation in the first trimester, two in the second and three in the last trimester of pregnancy. PHPN also recommends a consultation in the puerperium period, up to 42 days after birth; and laboratory exams, such as: (a) BTE in the first visit; (b) VDRL with one in the first visit and another after the 30th week; (c) a routine urine test, one in the first visit and the other after the 30th week; (d) a fasting glycemia test, one in the first visit and the other after the 30th week; (e) Hemoglobin/Hematocrit during the first visit; an HIV test during the first visit for mothers who live in cities with over fifty thousand inhabitants; an anti-tetanus vaccine application up to the immunizing dose (second) as part of the recommended scheme, or a boosting dose in the case of immunized women[1].

The index of women that are involved in pre-natal care in Brazil has risen markedly, if compared to the period before the implimentation of the PHPN, especially in the South and Southeastern regions of Brazil. However, this rise did now occur in the same fashion in terms of the number of consultations and exams performed[2].

Preliminary data from Porto Alegre in 2006, indicated that the pre-natal care coverage in the basic health unit network was 56.4% of 18,383 births[3]. On the other hand, it was seen that the quality of pre-natal care, even after the implementation of PHPN, was still precarious, especially related to the performance of pre-natal exams, puerperium consultations, educative actions and user satisfaction. Consequently, the participative training of prenatalists was developed. This involved the active participation of these professionals in the discussions allowing them to reflect on the topics in term of pre-natal care in participative meetings with the researchers.

The general objective is to analyze indicators related to pre-natal care, before and after the participative training of prenatalists at the UBS "Panorama", in Porto Alegre, between the years 2007 and 2009.

Specific objectives include the verification and comparison of the percentage of pre-natal exams of pregnant women registered at UBS "Panorama", in Porto Alegre, between the years 2007 and 2009; and the verification and comparison of the percentage of registered pregnant women with six or more pre-natal consultations and with a puerperal consultation at the UBS "Panorama", between the years 2007 and 2009.

METHODOLOGY

This is a before-and-after type of exploratory quantitative research using an experimental approach.

The study population was based on pregnant women registered in the SISPRENATAL program of the Basic Health Unit (UBS, in Portuguese) "Panorama", in the municipality of Porto Alegre, Brazil, between the years 2007 and 2009. The UBS is located in the

municipality of Porto Alegre in the region of Lomba do Pinheiro/Partenon,. It was chosen intentionally for this study because, in 2006, it had the highest number of pre-natal and birth registered consultations in the city[4]. The training of seven prenatalists, both doctors and nurses, took place in the Basic Health Unit "Panorama", a mixed unit located in the east part of Porto Alegre, in the region of Lomba do Pinheiro in 2008.

UBS "Panorama" has 5,200 family medical records, which means around 24 thousand inhabitants. The number of births in the region was 203 in 2006[3], and such numbers were stable until 2009.

The data analyzed was produced by the pregnant women who were also registered in the SISPRENATAL in 2007, before the participative training, and after it, in 2009.

The participative training was implemented by four researchers, three of them Nursing College professors, and the other a student with a scientific initiation scholarship. This training was composed of 12 monthly meetings, previously scheduled, and an average duration of one-hour, and the participation of seven pre-natalist professionals (doctors and nurses) employed by UBS "Panorama". The meetings took place between the months of January and December in 2008. Such meetings were initially about the clarification of the objectives of the research and the methodology to be used. Each participative meeting involved discussions and reflections about pre-natal care practices in the unit. In these meetings, texts were discussed, which involved the inclusion of light technologies (bonding, listening and reception) in health practices.

In the pre-natal care consultations observed by one of the researchers, the technical proceedings were revised by the prenatalists professionals (measurement of uterine height, auscultation of fetal heart beat, cytopathological collection exam, physical exam, evaluation of uterine dynamics, alert signs on the part of the mother and the fetus, clinical and laboratorial exams, among others), using as a reference, the actions suggested by the PHPN and by the Municipal Health Department[5]. The training performed followed the premises of participative research, which includes the

contribution of professionals, from the decision of the topics to be discussed with the review of their practices, to the proposals for new consultation actions[6].

This study is part of the research entitled "Use of light technologies for the qualification of pre-natal care". It was developed by the members of the Study Group of Woman and Baby's Health (GEMBE, in Portuguese) and it was approved by the Ethics in Research Committee of Porto Alegre City Hall (Protocol 001.051.355.06.0), after consideration and registration by the Commission of Research of the Nursing School of Rio Grande do Sul Federal University. The data for SISPRENATAL were obtained after the signing of the Terms of Responsibility for the Usage of Institutional Data at the Municipal Health Department of Porto Alegre City Hall. The prenatalists agreed to participate in this study, after reading and signing the Free and Clear Consent Agreement.

RESULTS

The data was analyzed in term of absolute and relative frequencies. The comparison between the years 2007 and 2009 was done through an adjusted chi-square test. The software used for statistical analysis was the "PEPI Programs for Epidemiologists", version 4.0, with a significance level of 5% ($p \leq 0.05$).

The pre-natal indicators analyzed were the ones established by the Directives of Low Risk Pre-natal Care of Porto Alegre Municipal Health Department[5]. The indicators were obtained from the information relating to the mothers who performed BTE, two fasting glycemia exams, HBsAg, hematocrit and hemoglobin, HIV exam, IGM, two VDRL exams (for the detection of Syphilis), urine exam (QUC and Uroculture with testing in the first trimester and QUC in the third), a puerperium consultation and six or more pre-natal consultations.

Table 1 – Indicators of pre-natal care of USB "Panorama", according to the data of SISPRENATAL, by absolute frequency, percentage and value of p. Porto Alegre, Brazil, 2007 and 2009.

SISPRENATAL Data	2007 n	%	2009 n	%	Percentage Variation	Value of p*
Registered mothers	267	100.0	266	100.0		
Puerperial Consultation	98	36.7	134	50.4	37.3	<0.001
Mothers with six or more consultations	87	32.6	93	35.0	7.4	0.45
BTE	147	55.1	155	58.3	5.8	0.33
Hb	151	56.6	181	68.4	20.8	□0.001
Ht	149	55.8	178	66.9	19.9	<0.001
Glycemia	34	12.7	87	32.7	157.5	<0.001
HBs Ag	29	10.9	180	67.7	525.1	□0.001
HIV	142	53.2	179	67.3	26.5	□0.001
IgM-Toxo	28	10.5	170	63.9	508.6	□0.001
VDRL	26	9.7	83	31.5	224.7	□0.001
	37	13.9	93	35	151.8	<0.001

Urine

* Refers to the comparison between 2007 and 2009.

On the table, it is possible to affirm that all analyzed indicators presented an increase in frequency, when comparing the years 2007 and 2009. The highest percentage variation referring to pre-natal exams was HbsAg (+521.1%), followed by IgMToxo (+508.6%), VDRL (+224.7%), Glycemia (+157.5%) and Urine (+151.8%). The BTE exam also had positive percentage variation, however in a lesser volume (5.8%). In relation to the consultations, both indexes, one referring to six or more pre-natal consultations and the other dealing with the puerperal consultation, indicated that there was a positive percentage variation of 7.4% and 37.2%, respectively.

Based on the comparative analysis of 2007 (before the training) and 2009 (after the training), through the use of an Adjusted Chi-Square Test, only the percentage of registered pregnant women that performed the BTE, ($p=0.33$) and the pregnant women with more than six pre-natal consultations ($p=0.45$) did not present statistical significance. All the other indicators presented values of $p <0.001$.

DISCUSSION

In Porto Alegre, in the years 2007 and 2009, the percentage of seven or more pre-natal consultations was closer to 70%, taking into consideration both private and public care[7]. Therefore, it was expected that this high coverage of the protocol of healthcare to low risk pregnant women by the Porto Alegre Municipal Health Department was extended to all registered women. However, the information obtained at the evaluated USB showed that, before and after the participative training, less than 40% of the registered mothers engaged in six or more pre-natal consultations, a 7.4% increase when comparing the years 2007 and 2009. These results demonstrated that there was a certain motivation on the part of the professionals to look after the mothers so that they continued with their

consultations, and finished their pre-natal proceedings in accordance with PHPN standards.

The SISPRENATAL report of Porto Alegre shows that, in 2006, only 38% of the women that received some support during pregnancy had a notified puerperal consultation[3]. The rise of the puerperal consultation ratio at USB "Panorama" suggests a link between the women and the prenatalists.

The pre-natal period is an ideal moment to implement measures to prevent complications to the mother and her child. This is because the performance of examinations is relevant for the early detection of illnesses[8].

In this study, a significant rise in demand for exams as a result of the directives of Porto Alegre City Hall was noted. This rise, in ascending order, were for the exams of HBsAG, IgMToxo and VDRL.

The vertical transmission of the Hepatitis B virus (VHB)[9] is considered the main form of contagion and presents high levels of chronicity, with elevated chances of the development of cirrhosis and hepatocellular carcinoma in young adults[10]. The data of this study showed a considerable increase in the number of mothers who performed the HbsAg exam for the detection of VHB. It is highlighted that this increase was superior to that for the HIV exam, which can be interpreted in terms of it being more incorporated into the practice of these professionals.

Congenital syphilis, an indicator of the quality of pre-natal care, was found in Porto Alegre in 115, 130 and 176 cases, in the years 2007, 2008 and 2009 respectively. It was expected that Porto Alegre would present 18 cases of congenital syphilis per year, considering the number of children born alive during the period under consideration. However, it was observed that in Porto Alegre in the past years there has been a significant rise in congenital syphilis cases, despite the fact the number of births is still the same as in 2006[4]. Studies which took place in Fortaleza and in Sumaré found low percentages, 52% and 41% respectively, of mothers treated properly during the pre-natal period. The reasons for these results are the lack or inadequacy of the partner, and

the absence of a second VDRL exam during the pre-natal period. Both studies indicate the low quality of pre-natal care[11,12].

The non-detection of syphilis during the pre-natal period represents a lost opportunity to intervene in the health of the infected mother, and therefore, a rise in the incidence of cases of congenital syphilis[13]. At the basic health unit studied here, the sensitivity and discussions among the professionals about the problem of congenital syphilis in the city, during the participative meetings, may have led to the more favorable results.

The main objective of the tracking of toxoplasmosis is to identify susceptible mothers in the group under consideration, aimed at the prevention of fetal transmission, and treatment if there is an intrauterine infection. In Paraná, in a study about the prevalence of toxoplasmosis among pregnant women, it was identified that 40% of them were seronegative and presented a high risk of fetal transmission[14]. Even though there is no consensus about the benefits of this exam in all pregnant women, the Brazilian Ministry of Health suggests the need for serological screening, especially in places where there is a high prevalence (see the technical manual of the Ministry about high risk pregnancy)[15]. In Rio Grande do Sul, the tracking of toxoplasmosis during pregnancy is considered highly important, given that toxoplasmosis is endemic in the state[5]. The early start of pre-natal care and a higher number of consultations can be associated with the repetition of serology and the sharing of information regarding the prevention of the infestation[16].

Many studies show that urinary infection during pregnancy has been associated with premature labor[17,18] and other obstetrical complications such as hypertensive syndromes during the pregnancy[19]. Despite the fact that there has been an exam to detect urinary infection in the mother for many decades, and also that it is a recommendation in the protocol of pre-natal care, in this study we observed a low percentage of mothers who were given this exam twice during pregnancy. This fact shows that urine testing is not considered particularly relevant, and even with the perinatal outcomes, urinary infection is not treated.

According to the directives of the Brazilian Ministry of Health, all pregnant women must perform glycemia dosage tests, even if they do not demonstrate risk factors. This is aimed at tracking diabetes during pregnancy, given that this disease is responsible for high levels of morbimortality of the mother and the baby. Once diagnosed, the teams at the basic health units must refer this mother to a higher complexity healthcare unit. In this study, a rise of the use of this exam was seen in the period observed. We believe the prenatalists had become more sensible to the detection of diabetes during pregnancy[15].

TBE exams did not show significant results in terms of the standard of six or more consultations in the pre-natal period. We imagine that, many times, prenatalists used the blood type based on previous pregnancies and found no health issues that justified the use of this exam. The statistically non-significant results indicate that the standard of six or more consultations needs to be emphasized, as well as to qualify of the actions of the professionals during pre-natal care, even though the pre-natal care coverage in the city of Porto Alegre achieved satisfactory levels during the observed period.

CONCLUSION

Starting from the understanding that pre-natal care contributes to an improvement in the quality of women and babies' healthcare, we conclude that the preparation of the professionals who assist these women, and the professionals' constant need for development, should be considered extremely important when it comes to providing the best healthcare possible. However, the training of professionals who work in this area of health needs the introduction of educative strategies and important updates so that municipalities can improve their mother and baby indicators.

Professional training is historically constructed in a vertical set in terms of the transmission of knowledge, through seminars and conferences. It can be affirmed that, despite the fact that public programs have established directives for a more humanized healthcare for the woman and her child, the actions of the professionals have not

impacted on the indicators of pre-natal care, and there is not the proper implementation of actions compatible with this philosophy of attention.

We believe that the model of training pre-natalist professionals in a more participative format has led to transformations in their daily practice. Besides the rise of exams during the pre-natal period, there was no evaluation regarding the treatment of possible infections. It is important to mention that this study was performed on only one UBS, and such findings should not be generalized. However, we hope that this training contributed to the results found with regard to the analyzed indicators, with the possibility that it might have implications for improvement in pre-natal care.

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