

CUIDADO É FUNDAMENTAL

UNIVERSIDADE FEDERAL DO ESTADO DO RIO DE JANEIRO • ESCOLA DE ENFERMAGEM ALFREDO PINTO

RESEARCH

DOI: 10.9789/2175-5361.2018.v10i3.871-876

Factors Associated to the Unplanned Pregnancy Type in the Family Health Strategy Project

Fatores Associados ao Tipo de Gestação não Planejada na Estratégia de Saúde da Família

Factores Asociados con el Tipo de Embarazo no Planificado en la Estrategia de Salud Familia

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How to quote this article:

Bonatti AF, Santos GWS, Ribeiro TAN, *et al.* Factors Associated to the Unplanned Pregnancy Type in the Family Health Strategy Project. Rev Fund Care Online. 2018 Jul./Sep.; 10(3):871-876. DOI: <http://dx.doi.org/10.9789/2175-5361.2018.v10i3.871-876>

ABSTRACT

Objective: The study's goal has been to identify the factors associated with the occurrence of unplanned pregnancy in two projects of Family Health Strategy. **Methods:** It is a cross-sectional study was carried out from August/2015 to October/2016, with a sample of 89 pregnant women and 51 puerperal women. Secondary data collection was carried out on SISPRENATAL WEB. The differences between the proportions were verified using Pearson's Chi-Square Test and the Fischer's Exact Test under 5% of statistical significance level, and the variables association magnitude were evaluated using the prevalence ratio. Data analyzes were performed with the aid of the statistical software R. **Results:** The unplanned pregnancies prevalence of 75% was observed. There was a statistically significant association between intercurrentence during the current gestation and the unplanned pregnancy type. **Conclusion:** The high occurrence of unplanned pregnancies, especially among those that showed intercurrentence, indicates the need for establishing strategies toward the health care service to this population.

Descriptors: Unplanned pregnancy, Family planning, Women's health.

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RESUMO

Objetivo: Identificar fatores associados à ocorrência de gravidez não planejada em duas Estratégias de Saúde da Família. **Método:** Estudo transversal, realizado nos meses de agosto/2015 a outubro/2016, com amostra de 89 gestantes e 51 puérperas. Foi realizada coleta de dados secundários no SISPRENATAL WEB. As diferenças entre as proporções foram verificadas, mediante uso dos Testes Qui-quadrado de Pearson e o Exato de Fischer ao nível de 5% de significância estatística e a magnitude das associações entre as variáveis foram avaliadas por meio da razão de prevalência. **Resultados:** Observou-se prevalência de 75% de gestação não planejada. Verificou-se associação estatisticamente significativa entre intercorrência durante a gestação atual e o tipo de gravidez não planejada.

Conclusão: A elevada ocorrência de gravidez não planejada, sobretudo entre aquelas que apresentaram intercorrência indica a necessidade de estabelecerem estratégias de saúde à atenção desta população.

Descritores: Gravidez não planejada, Planejamento familiar, Saúde da mulher.

RESUMEN

Objetivo: Identificar los factores asociados a la ocurrencia de embarazos no planificados en dos estrategias de Salud de la Familia. **Métodos:** Estudio transversal, realizado en agosto / 2015 a octubre / 2016 con una muestra de 89 mujeres embarazadas y las madres 51. Recopilación de datos secundarios se realizó en SISPRENATAL WEB. Las diferencias entre proporciones se verificaron mediante la prueba de chi-cuadrado de Pearson y Fisher exacto a 5% de significancia estadística y magnitud de las asociaciones entre las variables se evaluaron utilizando la razón de prevalencia. **Resultados:** Se observó una prevalencia del 75% de los embarazos no planificados. Se observó una asociación estadísticamente significativa entre las complicaciones durante el embarazo actual y el tipo de embarazo no deseado. **Conclusión:** La alta incidencia de embarazos no planificados, especialmente entre aquellos que tuvieron complicaciones indica la necesidad de establecer estrategias de salud para la atención de esta población.

Descriptores: Embarazo no planificado, La Planificación familiar, Salud de la Mujer.

INTRODUCTION

In Brazil, unplanned pregnancy is considered a public health issue.¹ According to the *Pesquisa Nacional de Demografia e Saúde (PNDS)* [National Demographic and Health Survey], 45.8% of births occurred in the first five years of the current decade were not planned, this number comes increasing over the years in various regions of the country and the world. Furthermore, it is estimated that 50% of young women with four or more children did not plan them, making the number of pregnancies that progress to abortion alarming.²

An unplanned pregnancy is understood to mean any gestation that was not programmed by the couple or, at least, by the woman. It may be unwanted, when it is opposed to the wishes and expectations of the couple, or untimely, when it happens at a time considered unfavorable. They both are responsible for a series of diseases related to maternal and perinatal reproductive health.

On the other hand, a planned pregnancy is one of the ways to achieve gender equality, improve the health of pregnant women and reduce child mortality.³

The occurrence of an unplanned pregnancy has an important impact on the provision of care during the puerperal pregnancy cycle. Although little studied, it pervades intrinsic and extrinsic factors related to social, cultural, environmental and health issues. In this perspective the fundamental right of women over their fertility does not depend exclusively on access to information or contraceptive methods.⁴

There is no evidence of the true role of individual risk factors in the number of unwanted pregnancies, mainly because there are few studies of the social settings in which these pregnancies occur.⁵ It is possible that the misuse of contraceptive methods may account for most cases of failure to prevent pregnancy, not the lack of knowledge about the method itself.⁶

Nowadays, there has been an intensification of discussions on the advances in public policies focused on women's health in Brazil. One of the main achievements is that he can plan the right time to have a child without harm to his health. This achievement was assured by the Federal Constitution of 1988 and also by Law No. 9.263, 1996, known as family or reproductive planning, and can be exercised outside the family context, is a set of actions that help people who intend to have children, the best time to have them and the spacing between one child and another.⁷

The municipality of *Rondonópolis*, *Mato Grosso* State, has been developing in primary health care actions to improve women's health, as well as to reproductive planning and prenatal care, but there is a need for studies to evaluate these actions in practice.

It is emphasized that for these actions to be developed effectively, it is necessary to know the characteristics of women, especially those who did not plan the pregnancy in order to elaborate appropriate public health actions. Given this context, the objective of this research was to identify the possible factors associated with the occurrence of unplanned pregnancy in two projects of Family Health Strategy (FHS) from the municipality of *Rondonópolis*, *Mato Grosso* State.

METHODS

It is an exploratory and cross-sectional study based on secondary data from the SISPRENATAL WEB of women registered and monitored during the puerperal pregnancy cycle in two FHS, located in the sanitary districts of both Southern and Eastern regions of *Rondonópolis* city, *Mato Grosso* State, over the period from October 2015 to August 2016.

Rondonópolis is a municipality in the State of *Mato Grosso*, and in 2016 its estimated population was 218,899 inhabitants.⁸ The municipality is Care Pole of the State Southern

region, which is constituted by 19 municipalities. Also, it has a health service network organized in three levels (primary, secondary and tertiary) distributed in five Health Districts (Midwest, North, East, West, South and Rural).

Primarily, all the pregnant women who underwent prenatal care and puerperal care in the two FHS were identified by searching the SISPRENATAL WEB for a total of 133 women and then selecting 89 pregnant women who were followed up until the last pre-childbirth consultation, and out of these 51 puerperal women that received care until the 42nd postoperative day.

The women were selected after verification of compliance with the inclusion and exclusion criteria. The following inclusion criteria were used: all pregnant women who had their registry and prenatal follow-up and puerperal consultation registered by a health professional on the SISPRENATAL WEB during the period of data collection and who were attended at the antenatal clinic of low risk. Regarding the exclusion criteria, pregnant women referred for high-risk prenatal care and those with incomplete data were not included in the study.

Data collected from the Information System, provided by health units, were stored in Microsoft Excel for Windows® worksheets. Subsequently, the exploratory analyzes were carried out in order to characterize the study population and to verify possible associations among the characteristics of interest, through the use of descriptive measures, bivariate frequency distributions and association measures. The differences between the proportions were verified using Pearson's Chi-Square Test and Fischer's Exact Test at 5% of statistical significance level.

In order to estimate the magnitude of the associations, the prevalence of unplanned pregnancy was used as a measure of frequency and as a measure of association the Prevalence Ratio (PR) and its respective 95% confidence intervals, estimated as a function of the relative incidence of regression logistics with logit link function. In all analyzes, the level of statistical significance was set at 5% ($p \leq 0.05$). Data analyzes were performed with the aid of statistical software R CORE TEAM 2016.

The dependent variable consisted of the type of unplanned gestation. Concerning the independent variables, socio-demographic variables (age, marital status and schooling), lifestyle (smoker, alcoholic), reproductive variables (family history, intercurrent in the current gestation, number of pregnancies, number of abortions, body mass index pre-gestational BMI (Body Mass Index), number of consultations, prenatal onset) and childbirth (delivery type and gestational age).

The research is a cut of the matrix research named "Prenatal Follow-up: promoting integral and multiprofessional care in the Family Health Strategy". It meets the prevailing ethical precepts necessary to conduct research with human beings according to the Resolution No. 466/2012 from the National Health Council, and approved by the Research

Ethics Committee from the *Hospital Universitário Júlio Müller (HUFM)* under the Legal Opinion No. 1.234.359/2015.

RESULTS AND DISCUSSION

The population consisted of 89 pregnant women, of whom 51 (57.3%) were followed up to the postpartum period. Due to lack of registration regarding puerperal follow-up, 38 (42.7%) had data collected only as pregnant women.

The data from this study reveal that the majority of women (75.3%) did not plan the actual pregnancy. This finding characterizes a high occurrence, being above the rate described in the study carried out in the health suburb of *Salvador* city, *Bahia* State, which found a prevalence of unplanned pregnancy (66.5%)² and other studies carried out in the urban area of the municipality of *Montes Claros* city, *Minas Gerais* State (58%) and in the Southern region of Brazil (65%).^{7,9} The prevalence higher than the finding was found in another cross-sectional study in the North area of *São Paulo* (81.2%) with women that did not plan the pregnancy.¹⁰

The prevalence of unplanned gestation in the city serves as an alert, since every year 80 million women worldwide experience an unwanted pregnancy and 60% do not evolve until their end, and the occurrence of this phenomenon is responsible for the increase in morbidity and mortality related to abortion, among other intercurrents.¹¹

Consequently, the prevention of unplanned pregnancy should be dealt with since the primary care with the guarantee of sexual and reproductive rights through Reproductive Planning, so that access to information and contraceptive methods are factors that facilitate the control of women over your body and in making decisions with regard to the reproduction.⁴

For the types of pregnancies: planned and unplanned some socio-demographic, reproductive and childbirth characteristics in the study were similar, since in both groups the women lived with a partner, they had a average age around 24 years old (SD=5.6), attended high school, were not either smokers or alcoholics. Moreover, they had no family history of systemic arterial hypertension, diabetes mellitus and twins, and had no history of abortion.

Considering the obstetric data, the majority of pregnant women started prenatal care in the 1st trimester on average 12.5 weeks (SD=6.0) and performed on average six antenatal visits (SD=2.6). Regarding the puerperal women, the gestational age at childbirth was on average 38.7 weeks (SD=1.8) and the predominantly vaginal delivery route for both types of pregnancy.

Nonetheless, some characteristics differed between groups. The study indicated a significant difference between the groups of women with planned and unplanned pregnancies, with regard to the intercurrent during the gestational period, more frequently in the unplanned

pregnancy group (67.2%). It was observed that there was a significant association between the intercurrent variables of the current gestation and the unplanned pregnancy dependent variable, in other words, there was a statistically significant difference in the occurrence of intercurrent with respect to the type of pregnancy ($p=0.045$), unplanned.

Among the intercurrents it is possible to address the following: urinary tract infection (UTI) (41.6%), gestational diabetes (6.7%), syphilis in pregnant women (5.6%), preeclampsia (2.2%), toxoplasmosis (2.2%), anemia (1.1%) and hyperthyroidism (1.1%), and only (6.7%) did not present intercurrent.

There are also higher frequencies in the number of gestations (multiparous) and adequate pre-gestational BMI in those with unplanned pregnancy. In contrast, women who planned pregnancy had fewer complications, were secondary, and were ov.

Table 1. Socio-demographic, reproductive and childbirth characteristics of women followed up in two Family Health Strategies, Rondonópolis-MT, from October 2015 to August/2016.

Variable	Profile	Planned Pregnancy (n=22)n(%)	Unplanned Pregnancy (n=67)n(%)	χ^2 p-value
Marital Status	With Partner	17(77.3)	44(65.7)	*0.452
	Without Partner	5(22.7)	23(34.3)	
Age	<15 years old	1(4.5)	1(1.5)	*0.584
	From 16 to 34 y/o	20(91.0)	63(94.0)	
	>35 years old	1(4.5)	3(4.5)	
Schooling	Elementary	5(22.7)	21(31.3)	*0.263
	High School	15(68.2)	24(35.7)	
	College	2(9.1)	6(9.0)	
Smoker	Yes	1(4.5)	5(7.5)	*0.987
	No	21(95.5)	62(92.5)	
Alcoholic	Yes	0(0.0)	3(4.5)	*0.572
	No	22(100.0)	64(95.5)	
Family History	Yes	7(31.8)	23(34.3)	*0.988
	No	15(68.2)	44(65.7)	
Pre-Gestational BMI	Underweight	2(10.0)	12(17.9)	*0.216
	Adequate	5(21.7)	26(38.8)	
	Overweight	9(41.0)	20(29.8)	
	Obesity	6(27.3)	9(13.5)	
Prenatal Onset	3° trimester	2(10.0)	2(3.0)	*0.147
	2° trimester	17(31.8)	25(37.3)	
	1° trimester	13(59.2)	40(59.7)	
Intercurrence in the Current Gestation	Yes	9(40.9)	45(67.2)	*0.045
	No	13(59.1)	22(32.8)	
Number of Pregnancies	Primiparous	6(27.2)	16(23.8)	*0.509
	Secundiparous	9(41.0)	20(29.8)	
	Multiparous	7(31.8)	31(46.4)	
Number of Abortions	None	20(91.0)	55(82.1)	*0.203
	1	1(4.5)	11(16.4)	
	2 or more	1(4.5)	1(1.5)	
Number of Consultations	From 1 to 6	14(63.6)	42(62.7)	*0.998
	7 or more	8(36.4)	25(37.3)	

Source: SISPRENATAL WEB; bp-value obtained by the Pearson's Chi-Square Test; cp-value obtained by the Fischer's Exact Test.

Although there are few studies in the literature that relate unplanned pregnancy to clinical intercurrent, it is worth mentioning that two studies conducted in both *São Paulo* and *Ceará* States identified that (59.4%) and (63.2%) pregnant women, respectively, who did not plan the pregnancy, presented the *UTI* as a major complication, which corroborates the findings of this study.¹²⁻¹³

Several factors make *UTI* a relevant intercurrent of the gestational period, aggravating both maternal and perinatal prognosis.¹⁴ There is concern for professionals responsible for prenatal care of these women, since in addition to the increased incidence of symptomatic infections among pregnant women, precisely in this period, the antimicrobial therapeutic arsenal and prophylactic possibilities are restricted considering toxicity. For these reasons, the combination of early diagnosis, followed by adequate and immediate therapy, helps to avoid compromising maternal and gestational prognosis.¹⁵

Although there were no significant proportional differences between the number of pregnancies and the unplanned pregnancy ($p=0.50$), it was observed that the women, who planned the pregnancy, already had a child (41%) and were characterized as secondary; in contrast, women who did not plan the pregnancy had either two or more children (46.4%), then being multiparous.

A cross-sectional study, conducted in Rio Grande do Sul State, found that having had children increases the risk of unplanned pregnancy. This effect is bigger as the larger is the number of children. Similar to other studies, it may be a sign of disconnection between maternal and child health and the available reproductive planning services.^{5,9}

A small number of women in the study who did not plan pregnancy were eutrophic (38.8%), but it should be noted that the others in both types of pregnancies presented overweight (70.8%) nutritional disorder.

It is emphasized that pre-gestational nutritional status is one of the main factors associated with weight gain during pregnancy. A study conducted in *Minas Gerais* State showed that most women were adequately weighed before becoming pregnant. Still, the number of pregnant women who become overweight requires attention. Research carried out in both *São Paulo* and *Rio Grande do Sul* States showed that pregnant women (64.3%) and (69.7%) were overweight and pre-gestational obesity, respectively.^{2,16,9}

The inadequate maternal nutritional status has a great impact on the growth and development of the newborn, and may compromise postnatal growth, with a high risk of morbidity in the first year of life. Furthermore, overweight can lead to consequences such as gestational dia-

betes mellitus and/or hypertensive pregnancy syndrome, among other diseases.¹⁷⁻¹⁸

Table 2. Association of socio-demographic, reproductive, childbirth factors with the unplanned pregnancy in pregnant women followed up in two Family Health Strategies, Rondonópolis-MT, from October 2015 to August/2016.

Variable	Profile	PR ^a	CI _{95%}
Marital Status	With Partner	1.00	---
	Without Partner	0.76	[0.29;2.01]
Age	<15 years old	1.00	---
	From 16 to 34 y/o	1.00	[0.11;9.18]
	>35 years old	1.92	[0.27;13.51]
Schooling	Elementary	1.00	---
	High School	1.03	[0.38;2.79]
	College	2.11	[0.83;5.39]
Smoker	Yes	1.00	---
	No	1.47	[0.20;11.13]
Alcoholic	Yes	1.00	---
	No	-	-
Family History	Yes	1.00	---
	No	1.20	[0.51;2.78]
Pre-Gestational BMI	Adequate	1.00	---
	Underweight	0.87	[0.25;3.01]
	Overweight	2.00	[0.87;4.59]
	Obesity	2.21	[1.04;5.24]
Prenatal Onset	3 ^o trimester	1.00	---
	2 ^o trimester	0.60	[0.13;2.72]
	1 ^o trimester	0.53	[0.16;1.79]
Intercurrence in the Current Gestation	Yes	1.00	---
	No	2.35	[1.09;5.05]
Number of Pregnancies	Primiparous	1.00	---
	Secundiparous	0.83	[0.33;2.10]
	Multiparous	0.45	[0.15;1.30]
Number of Abortions	None	1.00	---
	1	0.12	[0.00;3.64]
	2 or more	0.47	[0.11;1.99]
Number of Consultations	From 1 to 6	1.00	---
	7 or more	1.36	[0.67;2.75]
Childbirth	Cesarean	1.00	---
	Vaginal	1.35	[0.23;1.50]
Gestational Age	<37 weeks	1.00	---
	From 37 to 40 weeks	1.15	[0.23;2.01]
	>40 weeks	1.89	[0.10;1.35]

Source: SISPRENATAL WEB. aPrevalence Ratio.

Considering the data from Table 2, the association magnitudes found between the type of unplanned pregnancy and the socio-demographic, reproductive and childbirth factors were evaluated. It was verified that there are 2.3 more chances of an intercurrent event in unplanned pregnancy (95% CI 1.09-5.05).

When verifying the association between pre-gestational BMI and unplanned pregnancy, it was observed

that obese women are 2.2 times more likely to become pregnant without planning when compared to those with adequate BMI. This aspect reflects the importance and necessity of nutritional follow-up of women who wish to become pregnant, since it may be that obese women in planning pregnancy can achieve adequate BMI. In this sense, further research on the prior nutritional status of planned and unplanned pregnancies will be required.

This information is particularly relevant when implementing and evaluating maternal and perinatal health care programs. Most intervention programs aimed at improving access to contraception have used as success indicators the fertility rates of a country or region. Nevertheless, these indicators are less informative when assessing women's decision-making rights from when they become pregnant, whose most accurate form is the measure of pregnancy intent.⁵

Some limitations need to be considered when interpreting the results of the present study. One is the cross-sectional approach, which hinders the ability to identify causal inferences between the factors studied and the outcome. The use of secondary data and the sample size of the puerperal women also represent limitations. There is a great difficulty on the part of the health professionals regarding the typing and updating of the records in the information system, as well as of the municipal management referring to the material and human resources, in spite of the advances already achieved.

Another important limitation is undoubtedly the impossibility of separating unwanted pregnancies from those that were simply untimely in the unplanned pregnancy universe. Moreover, the study related to reproductive planning makes it possible to rethink strategies, especially towards the women with unplanned pregnancies, in order to reduce possible gestational and perinatal risk factors.

CONCLUSIONS

The reality found from this study's data reveals that unplanned pregnancy has practical and clinical importance in the onset of intercurrents during the gestational period. It is possible to affirm that this event is partly due to lack of reproductive planning and prenatal follow-up. In this investigation, socio-demographic and childbirth conditions in the study did not influence unplanned pregnancy. On the other hand, the reproductive situation related to the intercurrents and pre-gestational BMI were associated with unplanned pregnancy.

It is necessary that new studies amplify the knowledge in this field, investigating the possible consequences of these factors associated with the unplanned pregnancy. The redirection of public policies toward the women requires the improvement of living and health conditions, as far as social, reproductive and care issues are concerned.

It is up to the FHS professionals to implement and/or redirect actions that bring improvement of the pregnancy and puerperal follow-up of these women, including with regard to updating the data produced in SISPRENARATAL WEB. It is known that if the information system is properly filled up, it becomes an essential tool in the characterization of the population monitored. Furthermore, it provides an understanding of the factors that influence the type of pregnancy, which may lead to new strategies of care management. In fact, to reduce the number of unplanned pregnancies, it is essential to comprehend and intervene in the associated factors.

In brief, the study addressing reproductive planning and associated factors is a challenge for the FHS teams that aim to promote health promotion in their management of care, work and lifelong education. In this perspective, it is necessary to implement preventive public strategies and policies aimed at reducing both maternal and perinatal morbidity and mortality.

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Received on: 02/01/2017

Required Reviews: 02/07/2017

Approved on: 02/10/2017

Published on: 07/05/2018

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