



Reproductive history of women with tubal ligation*

História reprodutiva de mulheres laqueadas

Historia de la reproducción de mujeres con ligadura de trompas

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ABSTRACT

Objective: To investigate the obstetric profile of women with tubal ligation and the existence of association with socio-demographic variables and sex. **Methods:** This is a quantitative and retrospective documentary study, developed in a Natural Birth Center in July 2008 in the city of Fortaleza-CE. The sample was composed by 277 medical records of patients who had tubal ligation. **Results:** There were a high number of pregnancies associated with: low education, early onset of sexual life, lack of prior use of reversible contraceptive methods, and high frequency of cesarean delivery and abortions. **Conclusions:** The profile found reaffirms the need of: strengthen the guidance and exchange of information on family planning among health professionals and their patients; encouraging male participation; and, guarantee access to the various contraceptive methods.

Keywords: Sterilization, tubal; Family planning; Health profile

RESUMO

Objetivo: Investigar o perfil obstétrico de mulheres laqueadas e a existência de associação com variáveis sócio-demográficas e sexuais. **Métodos:** Estudo quantitativo, retrospectivo e documental, desenvolvido em um Centro de Parto Natural em julho de 2008, na cidade de Fortaleza-CE. A amostra foi composta por 277 prontuários de usuárias laqueadas. **Resultados:** Houve alto número de gestações associado à baixa escolaridade, início precoce da vida sexual e escassa utilização progressiva de métodos contraceptivos reversíveis, alta frequência de partos cesáreos e abortos. **Conclusão:** O perfil encontrado reafirma a necessidade de fortalecer as orientações e a troca de informação no planejamento familiar entre profissionais de saúde e a população atendida, estimular a participação masculina e garantir o acesso aos diversos métodos contraceptivos.

Descritores: Esterilização tubária; Planejamento familiar; Perfil de saúde

RESUMEN

Objetivo: Investigar el perfil obstétrico de mujeres con ligadura de trompas y la existencia de asociación con variables socio-demográficas y sexuales. **Métodos:** Se trata de un estudio cuantitativo, retrospectivo y documental, desarrollado en un Centro de Parto Natural, en julio de 2008, en la ciudad de Fortaleza-CE. La muestra fue composta por 277 fichas médicas de pacientes que hicieron ligadura de las trompas. **Resultados:** Hubo un alto número de gestaciones asociadas a: baja escolaridad, inicio precoz de la vida sexual, escasa utilización anterior de métodos contraceptivos reversibles, y alta frecuencia de partos por cesárea y abortos. **Conclusión:** El perfil encontrado reafirma la necesidad de: fortalecer las orientaciones y el intercambio de informaciones en la planificación familiar entre profesionales de la salud y la población atendida; estimular la participación masculina; y, garantizar el acceso a los diversos métodos contraceptivos.

Descriptores: Esterilización tubaria; Planificación familiar; Perfil de salud

* Study performed at the Center for Natural Childbirth Ligia Barros Costa (ANC) in July 2008, in Fortaleza (CE).

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INTRODUCTION

In Brazil, contraception is a result of a long process of struggle pursued, especially by the female population in order to separate maternity from desire and sexual life⁽¹⁾. The process culminated in the establishment of family planning services, which was effective starting in 1983 with the creation of the Program of Integral Assistance to Women's Health by the Ministry of Health. That program was considered a landmark of gender policies in the country; it introduced a new approach to women's health, including questions related to family planning and has adopted policies and measures taken to facilitate people's access to the use of contraceptive methods⁽²⁾.

The human conception is a product of the relation between man and woman. Therefore, it is expected that contraception is a committed decision from both partners involved in this interaction. In Brazil, a woman deals with contraception in a context of scarce or almost no male participation, she more often exercise the role of an object instead of subject of her sexual and reproductive history⁽³⁾.

This affirmation can be confirmed by the high frequency of use of two female contraceptive methods: tubal ligation (TL) and oral contraceptives, that together account for 60% of methods used by women between 15 and 49 years old⁽⁴⁾. In 1996, there were 40.1% of women who lived with a partner and had performed TL; already in 2006, this figure fell to 36.7%, representing a small drop for the period, fact that maintains Brazil as one of the countries with higher rates of women sterilization in the world⁽⁵⁻⁶⁾.

The tubal ligation always sparked controversy because it involves aspects such as political, ethical, religious, demographic and social⁽⁶⁾. The surgical method has been widely discussed because of its impact on the population; its prevalence has been identified as the main cause of the rate slowdown in population growth between the 1960 and 1990⁽⁷⁾. Some studies showed that women with tubal ligation have a higher number of pregnancies and therefore are eligible for sterilization, which indicates that the fertility decline in Brazil is related to factors others than the reproductive life in the population⁽⁸⁻¹⁰⁾.

In most cases, sterilization as a contraceptive method does not represent a choice or option; this method is imposed by the circumstances of life and for disinclination to continue using other contraceptive methods without the help's mate^(3,11). The imposition of the reproductive role upon women, as well as the blame for failures, causes feelings of lack of personal ability, when they cannot control this aspect of life⁽⁸⁾. Thus, the surgical method is perceived as a consequence of a differentiated reproductive history - denoted by high fertility rates and

difficulties in making decisions on contraceptive methods - and not as a modifier of her history.

Considering that exists other factors that influence the process of decision making on TL, and the need to elucidate the influence of economic and sexual factors in that process, it was decided to conduct this study in order to research the obstetric profile of women who has tubal ligation and to find the association of TL with socio-demographic and sexual variables.

Once we have a clarification on the factors most related to women who chose to make TL, nurses could make a better contribution to choose a safe option, well grounded and focused.

Knowing the clientele of higher adherence to TL might facilitate the work of nurses by reorienting the attendance dynamics of family planning services; the professionals can more easily identify women who are inclined to select this choice and so, be able of help to reinforce sexual and reproductive rights in this population, avoiding making a contraceptive choice precipitated without having the knowledge and clarity needed.

Moreover, the results emphasized the reproductive context of sterilized women, indicating a diagnostic situation that will facilitate the introduction of strategies to promote the health of these clients.

METHOD

This is a quantitative, retrospective and documentary study, developed at the Center for Natural Childbirth Ligia Barros Costa (CNC), that is a Unit of Primary Health Care, located in the city of Fortaleza, Ceara, Brazil. This service provides specific nursing care for prenatal and prevention of cervical cancer.

It was researched the type of contraceptive method recorded in the medical records used in gynecological nursing consultation, since April 2005 to June 2008, there were consulted 1,423 records. From 1,423 medical records, 237 women did not use contraceptive methods and 909 did use them. The study sample was constituted of 277 women who had performed tubal ligation procedure. Data collection was performed in July 2008. The data collection instrument followed the script employed in the gynecological nursing consultations, which include socio-demographic data of identification and sexual and reproductive histories. To analyze the data it was used the *Statistical Package for Social Sciences* (SPSS) version 14.0.

The first step to explain the results was the description of absolute and relative frequencies, the means and standard deviation; these values are presented in tables. In the second step, we analyzed the association between the socio-demographic data and the obstetric and sexual information, using the following statistical tools: Chi-

square and the correlation of Pearson/Spearman. The associations were considered statistically significant when the p value (probability), in the tests, was less than or equal to 0.05⁽¹²⁾.

The ethical aspects of this research were carried out considering the regulatory aspects concerning the involvement of human beings, according to Resolution 196/96 of the National Health Council⁽¹³⁾. The information contained in the patients' records was collected maintaining their anonymity. After the permission, to conduct the survey in the referred medical unit, was obtained, the project was approved by the Ethics Committee of the Federal University of Ceará, under protocol number 315/05.

RESULTS

To characterize the women of this study, it was used the following variables: age, level of education and marital status – that are presented in the Table 1. We highlight that the lack of information on some of the records surveyed explains the variety of the variables demonstrated.

Table 1 – Socio-demographic characterization of women with tubal ligation. CPN, Fortaleza, Ceara, Brazil, 07/2008.

Characterization	n.º	%
Age interval (n= 270)		
Less than 25 years	5	2.0
From 26 to 35 years	76	28.1
From 36 to 45 years	118	43.7
From 46 to 55 years	55	20.4
Above 55 years	16	5.8
Education (n= 214)		
Not literate	27	12.6
Elementary school incomplete	13	6.0
Elementary school complete	124	58.0
High school incomplete	5	2.4
High school complete	43	20.0
College incomplete	1	0.5
College complete	1	0.5
Marital status (n= 233)		
Married	151	64.8
Consensual union	16	6.9
Single	28	12.0
Divorced	22	9.4
Widow	16	6.9

The participants were older than 21 years and had a mean age of 40.19 years. It is highlighted that 81 (29.2%) women were still in the period of high fertility, which is below 35 years. When investigating the age at which women had done the TL, 14 (17.3%) of 81 women were

identified as sterilized under 25 years and, almost half, 38 (47%) was sterilized at the age of 30 years. The absence of information in the remaining 196 records weakens the ability to infer about the association that consider the age at which the TL was done.

With regard to level of education, 164(76.6%) respondents had completed up to elementary education, and 27(12.6%) were not literate. With reference to marital status, the majority, 167 (71.7%) declared living with a partner, being married or consensually united. The obstetric data of participants are shown in Table 2. The total result of variables did not consider the information of all 277 medical records, some of them were incomplete.

Table 2 - Obstetric history of women with tubal ligation CPN, Fortaleza (CE), 07/2008.

Obstetric history	n.º	%
Pregnancies (n= 274)		
From 1 to 2	46	16.8
From 3 to 4	139	50.7
5 or more	89	32.5
Children (n= 274)		
From 1 to 2	74	27.0
From 3 to 4	150	54.8
From 5 to 6	29	10.6
More than 6	21	7.6
Normal deliveries (n=253)		
None	52	20.5
1 to 4	163	64.5
5 to 7	31	12.3
More than 7	7	2.7
Forceps deliveries (n=20)		
1	19	95.0
2	1	5.0
Caesarean deliveries (n= 253)		
None	85	33.6
1	98	38.7
2	44	17.4
3	25	9.9
4	1	0.4
Abortion (n= 275)		
None	164	59.6
1	77	28.0
2 to 3	31	11.3
4 to 5	3	1.1

Of the records examined, 274 contained information on the obstetric history. Of these, the number of pregnancies ranged from 1 to 12, with predominance of - 139 (50.7%) - three to four pregnancies. Furthermore, 89 (32.5%) women gave birth five times or more and only 46 (16.8%) experienced fewer than three pregnancies. The total number of pregnancies was 1,117, with an

average of 4.08 pregnancies per woman.

The more frequent delivery was the normal type, 201 (72.5%) respondents reported experiencing vaginal deliveries. Among these were 1 to 12 natural deliveries; the more frequent interval was of 1 to 4 deliveries - 163 (81%) women. The deliveries with forceps accounted for 20 (3.15%) of all vaginal births.

Regarding the cesarean delivery, this type was experienced by 168 (60.6%) women, ranging from one to four deliveries. More than half of women, 98 (58.4%) underwent a single time to surgical delivery; 44 (26.1%) twice; 25 (14.9%) three times; and, only one (0.6%) four times. The total number of surgical deliveries was 265, averaging 1.05 births per woman, whereas vaginal delivery accounted for 635, with an average of 2.51 births per informant, which indicates a rate 2.3 times higher than surgical. The average of all deliveries was 3.5 births per woman.

Almost half of respondents sterilized, 111 (40.1%) had antecedents of abortion, with 166 obstetric losses. The majority, 77 (69.4%) experienced isolated abortions, with an average of 1.5 abortions per informant.

Regarding the outcome of all pregnancies (1,117), 265 (23.7%) were completed by cesarean section surgery, 635 (56.9%) by vaginal deliveries and 166 (14.8%) ended in abortion. The sample suffered losses of about 5% of this information.

The continuous variables: age and number of pregnancies, presented a significant correlation of Pearson/Spearman ($p=0.000$) and positive ($r=0.407$), that is, when the age increase the number of pregnancies also increases. Among women who gave birth more than six times, 29 (10.6%) were older than 35 years. More than half of women over 35 years, 25(52%) never used any contraceptive in past, which also occurred in 14 (70%) women over 45 years. In summary, 14 (80%) women who gave birth more than six times never used any contraceptive method. Among women aged 30 years, 29 (66%) gave birth three to four times, 4 (80%) of them were under 25 years, fact that also denotes a high fertility rate among young women.

The data in Table 3 show a significant association between pregnancy and education. Among the illiterate, 18 (66%) experienced more than three pregnancies, dropping to 95 (58%) among those who informed elementary school and 15 (30%) among the more educated.

The Pearson and Spearman correlation between continuous variables and sexual initiation and pregnancy, showed to be significant ($p = 0.000$), with negative correlation ($r = - 0.289$), that is, when the age of the beginning of sexual life increases the number of pregnancies decreases. It was observed that 181 (83.4%) women who gave birth three times or more, began their

sexually active during adolescence

The correlation of pregnancies and age of tubal ligation was significant ($p = 0.002$), and positive ($r = 0.349$). Among the participants who had more than four pregnancies, 16 (69.5%) were sterilized after 30 years of age. Among those with lower numbers of pregnancies, 31 (56.36%) had tubal ligation by the age of 30 and 24 (43.6%) before 28 years.

Table 3 – Association between education and number of pregnancies in women with tubal ligation. CPN, Fortaleza (CE), 07/2008.

Pregnancies	Education		Total n.º
	Elementary school	High school or more	
Up to 3 pregnancies	69	35	104
More than 3 pregnancies	95	15	110
Total	164	50	214

$p=0.01^*$

The evaluation of the reproductive period between the first sexual intercourse and the age of tubal ligation, showed a minimum of 2 years and a maximum of 26, with an average of 13.16 years. It is emphasized that 22 (30.1%) women had a decrease in the reproductive life span, less than 10 years.

The correlation of pregnancies and reproductive life span was significant and positive ($r = 0.077$, $p = 0.000$). Women who had only four years for procreation had a pregnancy, on average every 1.45 years. Those who had between 5 and 7 years of reproductive life had, on average, a gestation every 2.3 years and, among the women who had between 8 and 10 years of reproductive life the average was one every 3.25 years.

Other information obtained was that five women who were able of reproduction, for only two to five years, had up to three pregnancies. Among those with longer time of reproduction, from six to nine years, 12 (75%) had the same number of pregnancies, while 29 (60.4%) women who had more available time for reproduction gave birth more than three times. This information is shown in Table 4.

Table 4 – Association between years of fertility and parity in women with tubal ligation. CPN, Fortaleza (CE), 07/2008.

Years of fertility	Pregnancies		Total
	Up to 3 pregnancies	More than 3 pregnancies	
2 to 5 years	6	-	6
6 to 9 years	12	4	16
Above 10 years	19	29	48
Total	37	33	70

$p=0.003^*$

The short period of reproductive life was associated

(chi-square / $p = 0.000$) with a lower age of tubal ligation, especially among women who began their sexual life later. The group with shorter reproductive life (two to five years), began their sexual life later, but ended their reproductive lives earlier, may be as a solution for its high fertility rate, since they had the smallest interval between pregnancies (a pregnancy every 1.45 years).

The correlation between the number of pregnancies and the type of delivery was significant ($p = 0.02$ cesarean/ $p = 0.000$ normal), and negative for cesarean section ($r = -0.144$) and positive for the normal ($r = 0.804$). Thus, when the number of pregnancies increases the number of caesarean sections decreases; in the case of normal deliveries the correlation is positive therefore the number increases.

A positive and significant correlation ($r = 0.284$) was found between the number of abortions and age of sterilization; this information is presented in Table 5. Almost half women, who never had abortions, 21 (42.8%), were sterilized until the age of 27. This number decreased to 4 (19%) among those who suffered only one abortion.

Table 5 – Association between number of abortions and age of tubal ligation. CPN, Fortaleza (CE), jul 2008.

Abortion	Age Interval f tubal ligation						Total
	< 25	25-27	28-30	31-33	34-36	>36	
-	13	8	7	12	6	3	49
1	1	3	3	6	3	5	21
2	-	-	2	1	-	-	3
3	-	-	1	2	1	-	4
4	-	-	-	-	1	-	1
5	-	-	-	-	1	-	1
Total	14	11	13	21	12	8	79

$p=0.011^*$

DISCUSSION

When compared to the general population, sterilized women had a lower level of education. There is an inverse relationship between the percentage of women with tubal ligation and their level of education⁽¹⁴⁾, as evidenced in the studied.

Data on marital relations of women with tubal ligation showed that the time and age when started living with the partner are associated with the women's tubal ligation. Furthermore, they had the married status, and had marital relations more stable than the non-sterilized⁽⁸⁾. As found in the literature, the study revealed a predominance of women who were married or consensually united.

In the performed survey, the total number of pregnancies accounted for 1,117 and had an average of 4.08 pregnancies per woman. Research carried out in Ribeirão Preto (SP) with 235 sterilized women, as well as in a documentary study with 95 medical records of candidates for TL in the same city, found an average of pregnancies that is similar to the found in this study, that

is, mostly three or more pregnancies, and higher than the total of pregnancies of non-sterilized women⁽⁹⁻¹⁰⁾. These results showed the high fertility rate of these women, implying that surgical sterilization is regarded not as a contraceptive option, but as the solution of concerns of future unwanted pregnancies. The found average was higher than the findings found in the National Demographic and Health Survey, which shows a decrease in the fertility rate for women in the Northeast part of the country - from 3.1 to 1.8 children, between 1996 and 2006⁽⁵⁾.

The vaginal delivery was the most experienced by women that participated in this study, with an average 2.3 times higher than the surgical. Part of a multicenter study, conducted with 433 women in the city of Natal, Brazil, during pregnancy and then in postpartum period, showed that the minority who wanted caesarean delivery was found among multigravidae women, whose main argument was the desire for a TL⁽¹⁵⁾. In order to detach TL from caesareans, the Ordinance No. 48 of February 1999 prohibited the completion of sterilization at delivery or abortion, except in cases of proven need; also provides supervision and control by the Unified Health System that belongs to institutions that carry out family planning⁽¹⁶⁾.

The high frequency of abortion was mitigated by the greater number of isolated abortions. The average found of 1.5 abortions per woman was similar to the one found in a study conducted in Ribeirão Preto (SP) with 235 women who underwent TL⁽¹⁷⁾. This low rate can be explained by the more negative attitude of women about abortion and by the choice of undergo the sterilization been younger, besides the presence of one or more abortions which confirms the protection given by the TL⁽¹⁸⁾. Since 1985, the World Health Organization has set 15% as the maximum rate of cesarean delivery, so despite the prevalence of vaginal delivery, the representativeness of caesarean deliveries (23.7%) was above the recommended level⁽¹⁹⁾.

Older women used less contraception methods and gave birth more often. There is a direct relationship between the proportion of sterilized women, alive children and age; the older the age or the higher the number of living children, the higher the TL percentage⁽¹⁷⁾.

One possible explanation is that the older female generation matches with the population with more age, less educated and less prone to use contraceptives. Among the explanations for the fertility decline in Brazil, we found: changing economic scenarios, women entering the labor market, increasing access to information and, methods of regulating fertility, as well as increased educational level of Brazilians, especially the women⁽²⁰⁾.

This study revealed a high fertility rate, despite the use of methods to diminish it. A descriptive and qualitative research with 31 sterilized women that analyzed their contraceptive experiences, revealed the search for a method

that would provide high efficacy, safety, health, ease-of-use, acceptable by customs and the sexual partner; the more intense expectation was closely associated with TL⁽²¹⁾.

There is a strong association between parity and level of education; the higher association was found among primiparous (81%) women with higher educational level⁽¹⁵⁾. The less educated the greater the offspring number⁽¹⁷⁾. It was found more pregnancies among older women, with less education and less use of reversible contraception in the past.

The negative correlation between first sexual intercourse and pregnancies confirms the importance of practicing family planning with educational strategies in the adolescent population. In Brazil, considering the total number of children of women of childbearing age, the percentage of children aged 15 to 19 years increased in that total⁽²²⁾.

Pregnancies and age at which TL was done, were positively correlated, that confirms the findings of a study in which women who had fewer children underwent sterilization younger and had higher education⁽¹⁵⁾. It is interesting to be noticed that women who were sterilized before age 35, have 17 times more probability of repenting. On the other hand, those who had up to two pregnancies, the probability were of 15 times⁽¹⁸⁾.

The different demographic and socioeconomic profiles had influence on the spacing of pregnancies, being likely factors of interference: the woman's age at the time of birth of each child, the number of children they already have, the level of education, the social status, the participation in the workforce and, the place of residence. Younger women are more likely to have their next child within three years. In 50 countries, was found that 60% or more of women between 15 and 19 years, had intervals of less than three years between a child and another⁽²³⁾.

The occurrence of abortion delayed the age of sterilization. The presence of one or more abortions showed up as a protective factor against TL⁽¹⁴⁾. The desire to conceive may have influenced the decision timing for the surgical method, delaying the age of sterilization by the successive attempts to become pregnant.

FINAL CONSIDERATIONS

The socio-demographic characteristics found were

similar to those of other surveys with women with tubal ligation, making up a population, mostly married and with low educational level. The finding confirms the importance of strengthening educational strategies in family planning of couples who desire this method, allowing the existence of an appropriate contraceptive choice and conscious of consequences and aspects involved.

The obstetric history revealed a high average of pregnancies, facilitated by: the limited previous use of reversible contraceptives, the early onset of sexual activity and, the high frequency of abortions and cesarean sections, despite the prevalence of vaginal deliveries. It is observed that the choice of a surgical method was the result of the gynecological and obstetric history, marked by gender issues in family planning, by little enlightenment and experience regarding autonomy to orient their sexual life. Moreover, the studied population represented a group of women little covered by family planning, as evidenced by the low previous use of reversible contraceptive methods, limited diversity of choices and, high rate of pregnancies, even in some who have experienced contraceptive methods.

The correlation between the earlier age of first sexual intercourse and the highest number of pregnancies indicates the need for information dissemination on family planning and sexual health promotion in the spaces frequented by teenagers, so that in future, do not struggle with unplanned situations that lead to hasty choices.

Considering those findings, we concluded that the peculiarities of the studied group ratified the need for offering strategies to empower these women in their decisions about family planning, guarding the principle of autonomy. But for this woman to choose the most appropriate contraceptive method, it is necessary that the family planning services make available other options, guaranteeing the continuity of the selected method.

Thus, to know the factors that influence the decision for TL is very important to adopt strategies of guidance and counseling women who are more susceptible to this decision. Moreover, it is important to conduct further investigations into the reasons for adherence to the method in order to ground the findings in the literature and redirect more properly the nurse consultations in family planning, ensuring a free and conscious choice.

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