

Tubal ligation: the characterization of sterilized users of a public service

LAQUEADURA TUBÁRIA: CARACTERIZAÇÃO DE USUÁRIAS LAQUEADAS DE UM SERVIÇO PÚBLICO

LIGADURA DE TROMPAS: CARACTERIZACIÓN DE USUARIAS INTERVENIDAS EN UN SERVICIO PÚBLICO

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ABSTRACT

The purpose of this study was to trace the contraceptive history of sterilized women and identify the associations between educational, sexual and obstetric variables and the women's age when they underwent the procedure for tubal ligation (TL). This is a retrospective documentary study performed at the Lígia Barros Costa Natural Birthing Center in Fortaleza, Ceará, with 1423 records, dating from 2005 to 2008, 277 of which referred to sterilized women. Data analysis involved applying the calculation of frequencies, Pearson's chi-square test and correlation of Pearson/Spearman. Sterilized women represented a population with low education, marital union, and a history of infrequent use of other contraceptive methods other than condoms and the pill. Numbers of pregnancies and abortions/miscarriages were related with the age of TL, unlike the variables of education and the age of the first sexual intercourse. With this knowledge at hand, nurses can improve their look towards women looking forward to TL, and thus strengthen education strategies and promote greater diversity in the alternatives for contraception.

KEY WORDS

Nursing.
Sterilization, tubal.
Family planning.

RESUMO

Objetivou-se traçar o perfil anticoncepcional progresso de mulheres laqueadas e verificar associações entre variáveis educacionais, sexuais, obstétricas e a idade de realização da laqueadura tubária (LT). A pesquisa, de caráter documental retrospectiva, foi realizada no Centro de Parto Natural Lígia Barros Costa (CPN) em Fortaleza-CE, com 1423 prontuários, datados de 2005 a 2008, sendo 277 de mulheres laqueadas. Na análise aplicou-se cálculo de frequências, teste qui-quadrado de Pearson e correlação de Pearson/Spearman. As mulheres laqueadas revelaram perfil de baixa escolaridade, uniões maritais e escassa utilização pregressa de outros métodos, sendo a camisinha e o anticoncepcional oral os mais frequentes. Números de gestações e abortos se associaram com a idade de realização da LT, ao contrário das variáveis escolaridade e idade da coitarca. Sabedores dessa situação, os enfermeiros poderão aperfeiçoar seu olhar em relação às mulheres que almejam realizar a LT, fortalecendo estratégias educativas e promovendo maior diversidade contraceptiva à clientela.

DESCRITORES

Enfermagem.
Esterilização tubária.
Planejamento familiar.

RESUMEN

Se objetivó trazar el perfil anticonceptivo previo de mujeres con ligadura y verificar asociaciones entre variables educacionales, sexuales, obstétricas y la edad en que se realizaron la ligadura de trompas (LT). La investigación, de carácter documental retrospectiva, fue efectuada en el Centro de Parto Natural Lígia Barros Costa (CPN) en Fortaleza-CE-Brasil, con 1423 historias clínicas, con fechas entre 2005 y 2008, encontrándose entre ellos los correspondientes a 277 mujeres con ligadura. En el análisis se aplicó el cálculo de frecuencia, test Qui-cuadrado de Pearson y correlación de Pearson/Spearman. Las mujeres con ligadura respondieron a un perfil de baja escolaridad, uniones maritales y escasa utilización previa de otros métodos, resultando el preservativo y el anticonceptivo oral los más frecuentes. El número de gestaciones y abortos se asociaron con la edad de realización de la LT, al contrario de las variables escolaridad y edad de la primera relación sexual. En conocimiento de tales situaciones, los enfermeros podrán perfeccionar su visión sobre las mujeres que aspiran a realizarse una LT, fortaleciendo estrategias educativas y promoviendo mayor diversidad anticonceptiva a las pacientes.

DESCRIPTORES

Enfermería.
Esterilización tubaria.
Planificación familiar.

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INTRODUCTION

Conception is a product of the involvement between man and woman, which is why it is expected that equally involved partners decide upon contraception. In Brazil, however, women assume the responsibility for contraception with little or no male support, often playing a role much more of an object than a subject in their sexual and reproductive history⁽¹⁾.

This assertion can be evidenced in the converging use of two contraceptive methods (CMs) in Brazil - tubal ligation (TL) and oral hormonal contraception - which together have already corresponded to 60% of contraceptive use among women between 15 and 49 years old from all over the country, while only 2.6% of men submitted to vasectomy⁽²⁾.

Recently, a Brazilian study has appointed the continuing high prevalence of TL. In 1996, 40.1% of women with an active sexual life had undergone this surgery, which had dropped to 36.7% in 2006, a small decrease over ten years⁽³⁾. Hence, Brazil remains one of the countries with the highest female sterilization rates in the world⁽⁴⁾.

These percentages arouse reflections on how this choice is made, as it is a surgical method that causes changes in the couple's life, often ignored at the moment the decision is made, when only the *absence of collateral effects*, the convenience of TL and the strong desire to control fecundity are taken into account.

Female sterilization has been a polemic issue from the start as it involves political, ethical, religious, demographic and social aspects. This surgical method had been frequently discussed with regard to population aspects and its prevalence has been appointed as the main cause of the drop in population growth rates between the 1960's and 1990's⁽⁴⁾.

Only in November 1997 did the Brazilian Ministry of Health/Health Care Secretary issue Decree No 144, regulating the accomplishment of voluntary surgical sterilization in public services for men and women who were fully able to exercise their civil rights and were over 25 years of age, with at least two live children, providing that a minimum term of sixty days had passed between the manifestation of the desire and the surgery⁽⁵⁾.

Some aspects are involved in selecting tubal ligation as the means to control fecundity, which are: lack of knowledge, insecurity and the existence of myths regarding other methods, lack of or difficulty to get access to methods and lack of clarifications by health professionals that tubal ligation is a surgical contraceptive method that is difficult to revert⁽⁶⁾.

Moreover, the socio-historical process in which TL arrived in Brazil favored inadequate conditions for a free and informed choice, which contributed to the appearance of a group of regretful women, estimated at between 11% and 15% of Brazilian sterilized women⁽⁷⁻⁸⁾. Regret is the main repercussion TL can cause, with the age the procedure was performed as an important determinant⁽⁸⁻⁹⁾. To avoid this problem, it is important to identify those women or couples most prone to this choice, establish a counseling procedure for at least six months between the manifestation of their desire and the surgical act and offer a conscious option⁽⁹⁾.

A literature review on the theme reveals that nursing has an extremely important role to play among these women, especially to decrease the rates of regret. Family planning actions should cover all necessary conducts for a safe contraceptive choice, in order to satisfy the needs present in the couple's sexual and reproductive context without any future harm.

OBJECTIVES

In view of this reality, this research aimed to outline the previous contraceptive profile of women who underwent tubal ligation and verify associations between educational, sexual, obstetric variables and the age the procedure was performed, with a view to understanding the specificities present in the context this decision is processed in.

METHOD

Quantitative, retrospective, documentary research, developed at the Natural Birth Center Ligia Barros Costa (CPN), a primary health care unit that offers specific nursing care for prenatal monitoring and colon cancer prevention.

The type of contraceptive method was investigated as registered in the patient files used in gynecological nursing consultations between April 2005, when the service started functioning, and June 2008, totaling 1423. Information from these files was used for the first result analysis phase.

In the group of patient files, 909 contained information on current CM, while the remainder referred to patients without an active sexual life or who used no fecundity control measures. Among these, 277 files related to users who underwent TL, who served as the study subjects.

Data were collected in July 2008. The collection instrument was based on the information in the files of patients who attended gynecology nursing consultations, covering socio-demographic identification, sexual and obstetric history data. Excel for Windows software was used to store information, and Statistical Package for the Social Sciences (SPSS), version 14.0 for data analysis.

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The first analysis phase served to investigate the service users' contraceptive profile through a review of 1423 files for the period between April 2005 and June 2008.

In the second phase, frequencies, means and standard deviations of socio-demographic variables and previous contraceptive profile were described for the women who underwent TL, presented as tables with absolute and relative frequencies.

In the third phase, associations between age of TL and education, sexual and obstetric variables were investigated, using Pearson's chi-square and Pearson/Spearman's correlation test. These associations are considered statistically significant when p (probability) = 0.05⁽²⁰⁾. Data were processed and discussed according to the relevant literature.

Ethical and legal aspects of research involving human beings were respected, in compliance with National Health Council Resolution No 196, issued in 1996⁽¹¹⁾. Approval for the project was obtained from the Research Ethics Committee at UFC, protocol No 315/05.

RESULTS

Findings from the patient files were arranged in three distinct sessions: distribution of CM use, socio-demographic characterization of female population who underwent TL, previous contraceptive profile and associations between variables.

Of all patient files under analysis, 1277 (89.7%) referred to sexually active women. In that group, 909 (71.1%) mentioned some CM, 310 (24.2%) did not use contraceptive means and 58 (4.5%) contained no data records.

The distribution profile of the different CM mentioned by the 909 study participants (Table 1) evidenced the prevalent isolated use of tubal ligation, with 277 cases (30.4%), followed by 241 cases of oral contraceptives (26.6%) and 207 of male condoms (22.7%). Oral contraception associated with other methods was the most used CM though, totaling 292 (32.2%).

Table 1 - Distribution of No of patient files for women according to CM used, Natural Birth Center - Fortaleza, CE - 2005-2008

Contraceptive method (n=909)	N	%
Tubal ligation	277	30.4
Oral contraceptive	241	26.6
Male condom	207	22.7
Injectable contraceptive	59	6.5
Oral contraceptive and condom	51	5.6
Intra-uterine device (IUD)	27	3
Coitus interruptus	13	1.4
Injectable contraceptive and condom	7	0.8
Vasectomy	7	0.8
Breastfeeding with amenorrhea (BAM)	6	0.7
IUD and others	5	0.6
Knaus-Oginos rule	4	0.4
Injectable contraceptive and others	4	0.4
Emergency contraceptive	1	0.1

Based on this initial analysis, information from the 277 files of women after TL was reviewed to investigate aspects involved in this surgical contraceptive choice, with continuing high levels in the study population.

The following variables were used to characterize the population: age, education level and civil status, included in the identification data form used in the gynecology nursing consultation. These data were informed on the day of the investigation, causing a difference in the number of subjects due to incomplete files. The characteristics were shown in Table 2.

Table 2 - Distribution of No of patient files for women after tubal ligation according to socio-demographic characteristics, Natural Birth Center - Fortaleza, CE - 2005-2008

Characterization (n= 277)	N	%
Age range (in years)		
21 - 25	5	1.8
26 - 35	76	27.4
36 - 45	118	42.6
46 - 55	55	19.9
56 - 65	16	5.8
Not informed	7	2.5
Education		
Illiterate	27	9.7
Unfinished Primary Education	13	4.7
Finished Primary Education	124	44.8
Unfinished Secondary Education	5	1.8
Finished Secondary Education	43	15.5
Unfinished Higher Education	1	0.4
Finished Higher Education	1	0.4
Not informed	63	22.7
Civil status		
Married	151	54.5
Fixed Partner	16	5.8
Single	28	10.1
Divorced	22	7.9
Widow	16	5.8
Not informed	44	15.9

At the time of the consultation, all participants were over 21 years of age, except for 7 (2.5%) files that did not include this information. The average age was 40.19 years, with a minimum age of 21 and a maximum of 65 years, with a standard deviation of 8.98 years. It is highlighted that 81 (29.2%) participants were still in the high fertility period, i.e. younger than 35.

Education levels were low, as 164 (59.2%) informants had only finished primary education, while 27 (9.7%) were illiterate.

As for the marital status, 167 (60.3%) mentioned living with their partner, including married women and living with a fixed partner, showing a female population living in stable relations.

The participants' contraceptive profile, shown in Table 3, was outlined based on the following variables: age of TL, previous use of other CM and type of method.

Table 3 - Distribution of No of patient files for women after tubal ligation according to contraceptive profile, Natural Birth Center - Fortaleza, CE - 2005-2008

Contraceptive profile	N	%
Age of TL (n=277) (in years)		
21 - 24	14	5.0
25 - 27	11	4.0
28 - 30	13	4.7
31 - 33	22	8.0
34 - 36	12	4.3
37 - 46	9	3.2
Not informed	196	70.8
Previous use of CM (n=277)		
Yes	28	10.1
No	32	11.6
Not informed	217	78.3
Type of CM (n=28)		
Oral contraceptive	15	53.5
Condom	6	21.5
Oral contraceptive + condom	3	10.8
IUD	2	7.1
Knaus-Oginos rule	2	7.1

Only 81 files contained information on the age of TL. Fourteen (17.3%) of these were performed in women younger than 25, while almost half, 38 (47%), got sterilized by the age of 30 years, indicating great risks of regret. On the average, TL was performed at the age of 30.37 years, with a minimum of 21 and a maximum of 46 years and standard deviation 5.59 years.

Previous CM use was only documented in the files of 60 (21.6%) women after TL, representing a study limitation. Most of these women, 32 (53.3%), affirmed they had never used other methods before the TL. Among those who did, only 28 (46.6%) informed the method, with oral contraception as the most mentioned, followed by condoms. Low adherence levels were found for the combination of these two methods, the Intra-Uterine Device (IUD) and the Knaus-Oginos rule.

The association between the age of TL and education showed no statistical significance ($p=0.07$). Considering a 7% error margin, however, it was perceived that 6 (85.8%) women who got sterilized before the age of 25 years had finished primary education. None of the women with a secondary or higher education degree had undergone TL by that age. The large sample loss due to the lack of some information in the records interfered in the study associations.

When associating previous use of CM and education (Table 4) ($p= 0.03$), 20 (58,8%) women who had not finished secondary education mentioned no previous CM use, while only one woman (14.2%) with a secondary or higher education degree reported no past experiences with other contraceptives.

Table 4 - Association between education and previous use of CM by women after tubal ligation, Natural Birth Center - Fortaleza, CE - 2005-2008

Education	Previous use of CM		Total
	Yes	No	
Until primary education	14	20	34
Secondary education or more	6	1	7
Total	20	21	41

$p=0.03$

No statistically significant association ($p=0.08$) appeared when relating the start of sexual life with the age of TL. The analysis of crossed variables at an 8% error margin showed that 23 (67,6%) of women who ended the procreative phase earlier, by the age of 30, had their first sexual relation by the age of 17, while more than half, 20 (51.2%), of women who underwent TL after the age of 30 years started sexual life later.

A positive correlation ($r=0.349$) was found between pregnancies and age of TL ($p=0.002$), that is, the number of pregnancies increases along with the increased age of TL. These results evidenced that 24 (58.5%) women who got pregnant up to three times underwent TL by the age of 30 while, among women who got pregnant more than thrice, 22 (62.8%) got sterilized after that age.

As for other aspects interfering at the moment of sterilization, a significant positive ($r= 0.284$) correlation was found between the number of abortions and the age of TL (Table 5). This means that, the more abortions the women had undergone, the older she was when undergoing TL. Almost half of the women who had never suffered an abortion, 21 (42.8%), underwent TL by the age of 27 years. This number dropped to 4 (19%) among women victims of one abortion only. All women after two or more abortions underwent TL later.

Table 5 - Correlation between number of abortions and age of TL, Natural Birth Center - Fortaleza, CE - 2005-2008

Abortion	Age interval for TL						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

The prevalence of TL and oral contraceptives to the detriment of other contraceptive options, observed in this research, was similar to results of Brazilian survey⁽²⁻³⁾. This reality reflects the distortions between private birth con-

trol entities' offering of CM since the 1960's, almost exclusively using the pill and TL⁽¹²⁾.

The current panorama of Brazilian contraception does not comply with reproductive rights yet, so that, despite the changes the Comprehensive Women's Health Care Program (PAISM) permits, sterilization still prevails as common practice among other methods, especially when compared to vasectomy⁽¹³⁾.

A study carried out in the State of Ceará, which examined the dynamics of family planning care in the Family Health Planning, strengthened health services and particularly primary health care services' omission by not offering information and giving couples the opportunity to include vasectomy in the list of their contraceptive options⁽¹⁴⁾.

The abovementioned data indicate family planning difficulties in Brazil to comply with fundamental elements for high-quality family planning care, which are: free choice of methods, information to users, technical competency, user-service relation, follow-up and integration of family planning in reproductive health care⁽¹⁵⁾.

Professional competencies in contraception should cover updated technical, scientific and cultural knowledge, directed at care delivery to users' sexual and reproductive health needs. Other skills include giving orientations, informing and communicating, participating in decision-making on CM and welcoming clients respectfully⁽¹⁶⁾.

The study participants' low education level confirms authors' conclusion on the fact that women who underwent TL represent a group with a lower education level in comparison with the general population^(8,17), with an inverse association between the percentage of women who underwent TL and their education level: the lower the education level, the higher the percentage of women with TL.

Data on marital relations in the group of women with TL evidenced that marital status, duration of the relationship and age at which they started living with their current partner are associated with the fact that the women underwent TL. Sterilized women were mainly married and showed more stable marital relations over time than non-sterilized women⁽¹⁵⁾.

The age of TL indicated a young group, restricted to have children through natural methods, a factor that can entail future repercussions. The younger the age at which the patient submits to TL, the greater the chances of regret, due to greater risks of changes in marital, economic and emotional conditions present at the moment they submitted to this surgical method, representing strong reasons for regret⁽⁴⁾.

The study population's mean age of TL (30.37) was similar to a study of 235 women with TL in Ribeirão Preto, in which the mean age was 33.3 years. In that study, more than half submitted to TL between 30 and 39 years of age⁽¹⁷⁾.

When following women of reproductive age, health professionals, especially nurses, need to encourage the use of other CM in order to decrease post-TL regret rates among young women.

Based on health education, such orientation is extremely important, as one of the relevant causes for choosing sterilization is lack of knowledge on other methods and the aspects involved in choosing this surgical method⁽⁶⁾. A research on post-TL regret concluded that 83.6% of sterilized women affirmed they had not received sufficient information on the definitive nature of TL⁽⁸⁾.

A high percentage (53.3%) of absence of contraceptive experience was found in comparison with a research among women with TL, in which only 9% had not used some CM⁽⁸⁾. It should be reminded that the records of only 60 women contained information on previous use of other CM.

As for the distribution of CM types, oral contraceptives were the most mentioned, followed by condoms, which confirms the results of other studies among women with TL^(6,17). In general, a change in method only occurs after a negative experience with the pill and because they do not see a chance of social ascension. They generally have another child before undergoing tubal ligation⁽¹⁸⁾.

Although the government is favorable to family planning, in practice, it is observed that CM accessibility is not a fact. The public health system does not offer them in quantitative and qualitatively sufficient terms for couples to make their choice⁽¹⁹⁾.

Data analysis arouses reflection on these women's contraceptive experiences, their level of knowledge on different methods, the adequacy of a surgical method, the circumstances in which the TL was performed and the level of clarification about the physical or emotional repercussions of a surgical sterilization.

The contraceptive causes to choose TL as the family planning method include: lack of knowledge, insecurity, existence of myths around other methods, favoring mistaken interpretations of failures and collateral effects, lack of or difficult access to these methods, besides lack of clarifications by health professionals that TL is a surgical contraceptive method that is hard to revert⁽⁶⁾.

A study of women with TL and their contraceptive experiences revealed the search for a CM that offers the ideal combination of factors in all interviews: high efficacy, harmless to health, easy to use, acceptable to the woman's customs and accepted by the partner without resistance, with expectations being more intensely associated with TL⁽¹⁹⁻²⁰⁾. The search for a safe and practical method is perceived, which above all releases men from participating in contraception.

A research in Ribeirão Preto confirmed the association between education level and use of CM, with women who had never used a method before TL showing lower education levels and less knowledge on contraceptive methods.

In most cases, women with no education have undergone TL or do not use any CM⁽⁸⁾. Education influences not only family planning, but also contraceptive options.

The start age of sexual life did not show a statistically significant association ($p > 0.05$). Considering an 8% error margin, however, it was observed that women who started sexual life earlier got sterilized at a younger age. A Master's thesis at the University of São Paulo concluded that the search for TL among young women was attributed to the early reproductive life and the larger number of children within a short time period⁽¹⁷⁾.

The correlation between the number of pregnancies and the age of TL showed a positive significant relation ($r = 0.349$). A retrospective cohort study on the reproductive health of women in Campinas evidenced that women with less children and a higher education level underwent TL at a younger age. This reality increases the risk of future regret, with women who got sterilized before the age of 35 years having 17 times more chance of regret than women who had up to two pregnancies, with 15 times more chance⁽⁷⁾.

The obstetric variable abortion also showed to be associated with the age of TL. To a larger number of abortions corresponded a higher age of TL, so that all women who had an abortion underwent TL at a higher age. These data support the findings of a research on the ideal number of children and post-TL regret, in which the presence of one or more abortions served as a protection factor against TL⁽⁷⁾. The desire to conceive may have influenced the moment of deciding in favor of the surgical method, postponing the age of the TL due to repeated attempts to get pregnant.

CONCLUSION

The first phase of the results evidenced the historically important role of tubal ligation and oral contraceptives, followed by male condoms. This predominance reflects distortions in family planning, arousing reflections on the quality of reproductive care to public health service users and on the availability and range of methods offered.

The identification characteristics found were similar to other studies on women with TL, showing a population that was mostly married or lived with a fixed partner and had a

low education level. This conclusion ratifies the importance of strengthening family planning strategies among couples wanting this method, with a view to an adequate contraceptive choice, in which the partners are aware of the aspects involved.

Although the women underwent TL at different ages, almost half of the files containing this information showed that women got sterilized by the age of 30 years, revealing a young population restricted to have children through natural methods and vulnerable to future regrets.

The previous contraceptive profile represented a group of sterilized women who receive little attention in family planning strategies, as evidenced by the history of low use of a restricted range of non-surgical methods. Education was associated with family planning and contraceptive experiences, with women with higher education levels reporting higher levels of previous CM use.

Education level and start of sexual life showed not association ($p = 0.05$) with the termination of procreative life through sterilization. Despite this finding, it is highlighted that the performance of family planning and sexual and reproductive health promotion strategies should intensively cover adolescence, which can play a determinant role in the resolution of these young women's gynecological-obstetric history.

Obstetric variables were associated with the age of TL. The number of pregnancies and abortions showed a positive correlation with the investigated outcome, evidencing TL at a higher age among women victims of obstetric losses.

These conclusions support nursing practice in family planning, as they raise determinant aspects in the selection of the female surgical method to control fecundity. Aware of this situation, nurses can gain a better perspective on risk groups for choosing TL, strengthening educative strategies and attempting to promote a wider range of contraceptive experiences for their clients.

The fact that much relevant information was not registered in the patient files under analysis represented a study limitation. Nursing professionals need to value to quality of their records. To the extent that they document information on users and nursing actions, they can serve as study instruments to improve care, diagnose the population's situation and disseminate new nursing studies.

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