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Demand for contraception in Brazil in 2006: contribution to the implementation of fertility preferences

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Abstract *This study aimed to estimate the demand for contraception in Brazil from the latest available data and identify possible associations between the sociodemographic and economic characteristics of women and the occurrence of this phenomenon. For this, we used data from the National Demographic and Health of Women and Children (PNDS) 2006 database and the estimation method reviewed by Bradley et al. (2012). Despite the high percentage of contraceptive use in Brazil, there was an estimated unmet fertility planning need in 8.3% of married/partnered women aged 15-49 years. That is, there was a specific group of women (at the beginning and end of their reproductive life, in the lower economic strata, evangelical and without religion) who wanted to have more children or have them later and failed to do so due to a lack of access to fertility regulation means. It was concluded that there was a negligible reduction in demand compared to 1996, which has reinforced the need to focus public investments to achieve lower unmet contraception demand differentials in the country and has guaranteed the implementation of the rights of reproductive preferences.*

Key words *Family planning, Need not met by contraception, PNDS 2006, Reproductive preferences*

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Introduction

The analysis of reproductive preferences has acquired increasing prominence as a tool that enables a more precise prediction of fertility levels. This distinction is because the wishes and intentions for children form the most important subjective dimension in evaluating how intentions are carried out in those who have achieved fertility[1]. It is also possible to understand the reasons why individuals do not achieve their desired fertility by either not reaching the desired number of children or having more children than desired[2].

From the analysis of intended and unintended births and the use of contraceptive methods emerged one of the most important indicators for the sexual and reproductive health of the population: the unmet demand for contraception. This concept relates to the discrepancy between the preferences of fertility and the use of contraception and specifically refers to the behavior of women who wanted to avoid or delay pregnancy but were not using contraception for the purpose. The identification and measurement of this group of women, especially in developing countries, now has great importance due to population conferences (especially the Cairo Conference of 1994) and the claims of the feminist movement, where discussions about family planning options and reproductive rights gained strength[3].

Bongaarts et al.[4] highlight that family planning is directly related to improving health, reducing poverty and empowering women. Thus, the estimation of the unmet demand for contraception remains an important research topic in various areas, since it exerts different impacts on fertility levels and the sexual and reproductive lives of individuals[5].

In Brazil, despite the context of a reduced rate of fertility[6,7], and although there is a high prevalence of contraceptive[8] use and an increased number of women who have fewer children than desired, a representative percentage of women experience positive fertility discrepancies[9]. This finding means the occurrence of unwanted pregnancies, abortions and unplanned or undesired children[10], which is a result of the unmet contraception demand, is still high in the country (7.7% in 2006)[8].

Thus, determination of the magnitude of the total demand for contraception is an indispensable tool in the formulation of public policies to ensure access to reproductive rights[5]. Therefore, meeting the unmet population demand for contraception has significant implications for reducing the number of unwanted births, which can considerably affect the fertility rates, especially in the groups in which they remain high because of the difficult access to the appropriate mechanisms for natality control[11].

However, one cannot assume that having many children constitutes a negative[12] value that needs to be fought, nor assume that low fertility is synonymous with a guarantee to respect the rights and reproductive desires of women. Different types of unsatisfied demand imply different types of public intervention. Moreover, the demand cannot be remedied simply by providing contraceptive, making access more convenient or lowering costs. Social, cultural and religious factors have a strong influence on whether means for adjusting fertility are adopted[13].

Access to adequate contraception is part of the general framework for a system of guarantees to sexual and reproductive health and is linked directly to reproductive[14] rights. Therefore, in an attempt to contribute to the development of this issue and update data on demand for contraception in Brazil, this article seeks to measure the unmet demand for fertility planning among Brazilian women who are 15-49 years old and married or united. In particular, it seeks to identify and analyze the possible differential in demand for contraception according to sociodemographic and economic variables of women to make inferences about the different forms of implementation, articulation and differentiation of the reproductive behaviors of Brazilian women.

Panorama of use and access to contraceptive methods in Brazil

Brazil has a rather peculiar history regarding the access to contraception. Due to the absence of effective public policies for family planning at the beginning of the fertility decline process (starting in the 1960s), there was, consequently, an increase in the demand for means of regulation of fertility by the women ("perverse effect"), primarily among those who were poorer[15]. Because they could not buy the methods offered, they were exposed "to unplanned pregnancy, unsafe abortion and sterilization linked to cesarean deliveries performed in Unique System of Health and 'paid for out of the' deliveries registered as other medical procedures, as well as sterilizations in exchange for votes"[16].

This history has generated strong inequalities in both access to and the type of methods used by Brazilian women. Perpétuo and Wong[17],

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in a comparative analysis of data from 1996 and 2006 PNDS databases, showed that there was an increase in the prevalence of contraceptive use due to the expansion of the use of methods in the lower socioeconomic strata. The study reported the proportional distribution of the methods used, the reduction in female sterilization and the increased use of the pill, male sterilization and condoms. However, there was little improvement in the "quality" of contraception in women with lower socioeconomic levels because the contraceptive mix, namely, the availability of different types of methods, is still limited, with female sterilization still being the method used most by women with less education and income. More recently, Farias et al.[18] showed that the prevalence of oral and injectable contraceptives was approximately 33% among women 15-49 years of age living in urban areas of the country. The differences were significant only for age, marital status and geographic region; the usage percentage was lower among younger women without a partner and residents in the North.

These data reflect a significant number of women who do not want to have children or would like to have them later in life, who are not using contraception and thus are at risk of an unwanted pregnancy. Tavares[19] showed that, in Brazil in 1996, this percentage was 7.3% among women in total; 4.7% and 2.6% wanted to limit or space the number of children, respectively. The author estimated that approximately 41% of women users of contraceptive methods discontinue use in the first 12 months. This discontinuity of the contraceptive method without switching to another method makes women vulnerable to unwanted[19] pregnancy.

As a result of this expansion of access, there was a significant drop in the proportion of undesirability of both the last child born in the five years prior to the survey (23.1% to 18.2%) and ongoing pregnancy at the time of the interview (28 2% to 19.0%). Nevertheless, the social differences remained, with the poorer, less educated, black, unmarried or no partnered, older and highly parity presenting a higher prevalence of unwanted births. For the ongoing pregnancies, the undesirability was higher for older women and those with more parity. Thus, there was a reduction in failures to control the reproductive process, either by use of the highest and best contraceptive methods or by the decision to voluntarily interrupt pregnancies[20,21].

However, the study by Carvalho et al.[9] noted that from 1996 to 2006, there was a reversal in the gap between the number of children wanted and born, when, in 1996, approximately 40% of women at the end of the reproductive period had more children than desired and only 24% experienced the opposite. In 2006, the percentage of women who completed the reproductive period with fewer children than desired became higher than the percentage of those who exceeded the desired number of children (34% versus 27%, respectively). However, the study highlights the socioeconomic differentials and suggests that despite a trend of an increasing negative fertility discrepancy for the country as a whole, the positive fertility discrepancy remains a problem of access to sexual health services by some women.

The positive discrepancy in fertility and unmet demand for contraception was reflected in the number of abortions because of unwanted pregnancies. Despite the absence of official statistics on abortions in Brazil, since many women omit this information not only out of concern for the issue of the illegality of the act itself but also because of the emotional and psychological aspects involved, studies indicate an abortion prevalence of approximately 1 for each 5 pregnant women. Moreover, it appears that thousands of Brazilians die from abortion[10]. Thus, the existence of a demand for contraception impacts, directly or indirectly, health services and the various correlated public policies and action points of sexual health and reproductive rights[5,11].

Even in the context of changes in the access and use of methods in the country (approximately 77% of women used some modern method of contraception in 2006[8]) and the creation of the National Policy for Integral Assistance to Women's Health that has extended the possibilities of access to reproductive rights from the Family Planning Law in 1996[14], the implementation of reproductive preferences in Brazil remains committed and deficient, sometimes by precarious domain information from users and sometimes by a lack of public funds provision or the difficulties of accessing family planning services.

Materials and methods

Database

This study used data from the National Demographic and Health of Women and Children (PNDS 2006) database[22]. This research intended to update knowledge of the health indicators of women and children, their differentials and their

determinants. The study population included the permanent households in the public sectors (including the slums), from the urban and rural areas in all five regions of Brazil, that had women residents who were 15-49 years old. Part of the DHS-type surveys (Demographic Health Survey) present a wealth of information on the sexual and reproductive health of women and includes specific information on reproductive choice and contraceptive use (PNDS, 2006)[22].

The PNDS 2006 is a household survey with a complex random sample[23], obtained in two selection stages and, therefore, requires care when analyzing the data. The recommendations of the PNDS 2006 technical report became the embodiment of the sampling plan: cd002-Conglomerate variables, cd003-Stratum and XM999_Factor_expansion, which correspond to the census sector information, the strata information and the weight of women in the sample, respectively. SPSS statistical package, version 9, which offers specific routines for processing data from complex samples, was used to perform such analyses (analyze complex sample).

Method to estimate the demand for contraception

The concern in determining the unmet need (unmet need) for family planning has been a recurring theme in fertility research since the early 1960s[3]. The term was first used in 1970 to define the existence of women or couples who were not using contraception, but who wished to control their fertility, delay the next child or prevent an unwanted pregnancy after having reached the desired number of children[24].

Since this initial concept, the algorithm for estimating the demand for contraceptive methods has undergone changes in order to make it more efficient and adapt it to the available data[25-31]. A comprehensive review of all changes in the unmet demand for contraception is reported by Bradley et al.[24]; this reference was used as a guide to measure this indicator.

In this latest review, it was determined that women 15 to 49 years old are the group of women to focus on in investigations, based on knowing the ages at which women are likely to be married or partnered this group was separated into those who practiced contraception and were unfruitful, those who were pregnant or amenorrheic and those who did not practice contraception. Among the latter two groups, those that needed methods to regulate their fertility[24] were determined. The women were sorted into four groups: those who were using contraception, those who did not use contraceptive methods but wanted to have children, and two groups that had an unsatisfied demand for the use of contraceptive methods: a group who had a demand to limit the number of children (did not want more children) and a group of those who required contraception to space the number of children (wanted children in the future). Below is an outline of how these groups are estimated in the general context of married or united women in the revised version of the indicator (Chart 1).

Variables used and statistical modeling

The variables needed to estimate demand were: currently pregnant; if pregnant: desire for more children, how long to wait to have another child; current use of contraception; type of current contraceptive method; reason for not using contraception currently; desire for more children; time since the last menstruation; total live births; age of children; how long to wait to have more children; marital status; date joined and current age.

For the descriptive and statistical analysis, the following variables were included: household situation, geographic regions, education, age, race/color, religion, economic strata (also known as the Brazil Economic Classification Criterion) and age at which they had their first child.

First, the sociodemographic and economic profile of women who did not use contraceptive methods was analyzed by the presence of an unsatisfied demand for contraception and the type of demand (space or limit). Chi-square tests were used (Pearson correlation) to assess the association between variables, considering the 10% significance level.

The model of multinomial logistic regression was subsequently adopted to estimate the relationship between sociodemographic and economic variables and the type of demand for contraception to understand the possible differences in the group of women who had desires to space their children and the group of women who had desires to limit the number of children. According to the guidelines of Hosmer and Lemeshow[32], the multinomial model differs because its response variable has more than two categories. Thus, three possible answers were included in the model: women who did not use contraceptive methods and had no demand (0), women who needed to limit fertility (1) and women needed to space the number of children (2).

Chart 1. Scheme of the components of the unmet need for contraceptive methods among married or partnered women between 15 and 49 years of age.

<table>
<tr><td rowspan="2">Group 1
Women who used contraception</td><td colspan="3">Woman who did not use contraception</td></tr>
<tr><td>Not pregnant or amenorrheic</td><td colspan="2">Not pregnant or amenorrheic</td></tr>
<tr><td rowspan="3">They did not want more children, were sterilized, or could not get pregnant.

They used contraception to limit</td><td rowspan="2">They did not wish for the current pregnancy or the last birth.
Unmet need to limit</td><td>Group 3 Unfruitful</td><td>Group 4 Fecund</td></tr>
<tr><td rowspan="2">Married for over five years, they had no children in the last five years and have never used contraception</td><td rowspan="2">They wanted to have children after two years or they wanted to have children but were undecided about time or actual desire.

Unmet need to space</td></tr>
<tr><td>They wanted the pregnancy later.
Unmet need to space</td><td>They went 6 months or more without menstruating and were not amenorrheic</td></tr>
<tr><td rowspan="3">All others.

They used contraception to space</td><td>They wanted the current pregnancy and the last birth.
No unmet need</td><td>They could not get pregnant</td><td>They did not want more children
Unmet need to limit</td></tr>
<tr><td rowspan="2">They did not respond to the desire for the current and last pregnancy or birth.
Missing</td><td>Last menstrual period occurred before the last delivery which was 5 years or more prior</td><td>They wanted to have children in the next two years
No unmet need</td></tr>
<tr><td>Were in menopause, had a hysterectomy or never menstruated</td><td>They did not respond about future intentions for children.
Missing</td></tr>
</table>

Source: Based on Bradley et al.[24].

Results and discussions

By applying the revised method of calculating the unsatisfied demand for contraception among women married or cohabiting, it was found that there was a demand of 8.3% regulation of the fertility in Brazil, 2006 (Figure 1). In 1996, Tavares et al.[19] found an unmet demand for contraception of 7.3% among married/united women. This percentage is slightly high for 2006 and may be related to methodological changes in measuring the indicator in the period. With the same methodology, i.e., with the revised indicator, Bradley et al.[24] found a demand of 10.8% in 1996. This finding indicates that there was a small reduction in demand for fertility planning in Brazil in recent decades. Nevertheless, it is worth noting that the 8.3% includes more than half of women using no methods. That is, it corresponds to women who would like to postpone or no longer have children but were not using any method to implement this desire.

With respect to demand type (limit or space the number of children), (Figure 1) the demand was higher among those women who wanted to limit births (53% of women who had demand), i.e., women did not wish to have children. Previous studies in several countries in Latin America, Asia, North Africa, the Caribbean and Brazil also pointed out the existence of an unsatisfied demand for contraception to avoid the next birth that was higher than that to postpone the next birth in these regions[8,24,33].

When this unmet need is disaggregated according to certain demographic and economic characteristics (Table 1), it was observed that the geographic, home and race/color status variables were not statistically significant. Socioeconomic variables (economic and educational strata) showed that less educated women and women in less privileged economic strata had an increased demand for contraception, given the fact that, in most cases, these women did not have children, and demanded definitive or durability methods.

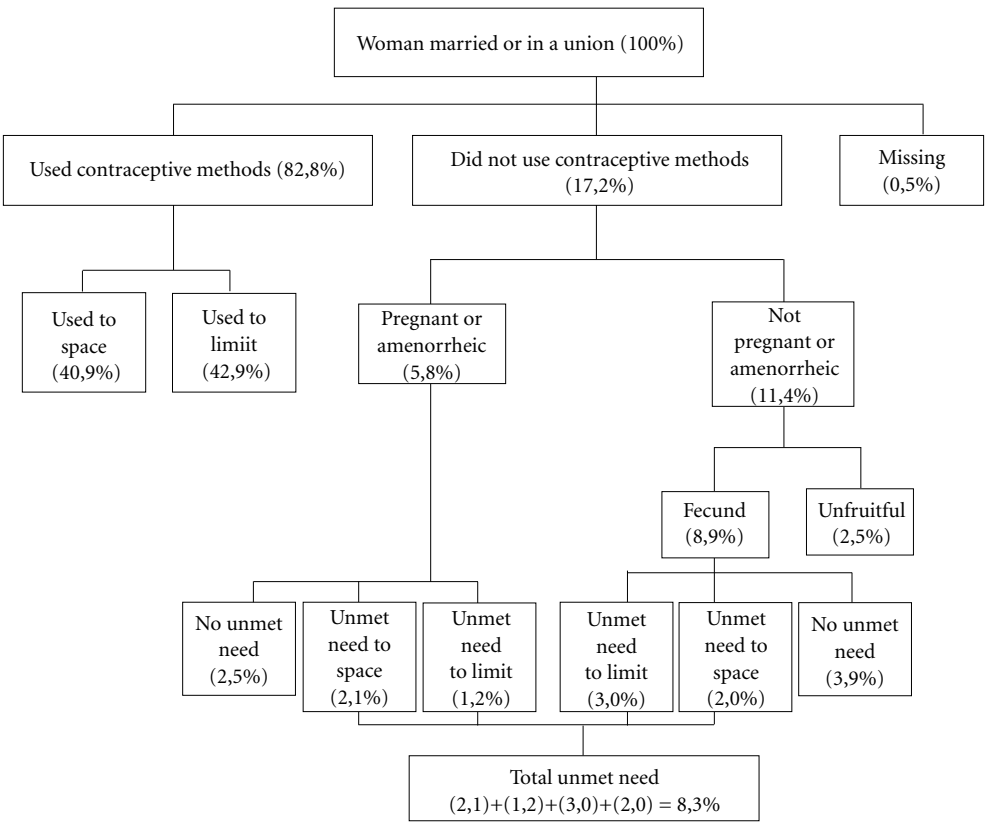

Figure 1. Percentage of women who used contraception, intended to use contraception and had an unmet need for fertility planning in Brazil, 2006.

Source: PNDS, 2006.

The marital status of women was also related to the unmet contraceptive demand indicator, where women in a consensual union had a higher unmet need for contraception than those in a formal union.

Somehow, the current religion of the woman seems to interfere with access to fertility planning, as traditional Protestant women without religion showed a greater unmet need for contraception. However, while the first group wanted to delay births, the second had a preference for limiting their offspring. Age appears to be a very relevant variable with regard to the demand for contraception; the demand was higher among older women and was more often to limit fertility than among the younger women, who more often wanted to postpone births. It is important to note that age may also influence the differential demand type between religious groups because it is known that traditional Protestant women are older and have more parity. Additionally, those without religion were younger[34].

Another indicator that proved to be relevant in this context was the reproductive history of the women (Table 1), where there was a lower demand for fertility planning among those with fewer children; in this context, the need would be to space births. On the other hand, among those with higher parity the unmet need for contraception was now to limit the number of children, probably because the woman had already reached their desired fertility. As important as the number of children is the age at which the woman became a mother; almost 75% of those who had their children early (before age 20) had a higher demand for contraception. This observation may be related to the fact that these women have achieved their ideal family size and, therefore,

Table 1. Percentage of married or partnered women who were not using contraception according to the demand for fertility planning and sociodemographic and economic variables, Brazil, 2006.

Sociodemographic and economic variables		No demand n = 636 6.4%	Demand to limit n = 417 4.2%	Demand for spacing n = 403 4.1%	Total n = 1455 14.7%	P-Value
Geographic regions	North	36.20	35.75	28.05	100	0.535
	Northeast	39.82	28.46	31.72	100	
	Southeast	46.56	26.11	27.33	100	
	South	44.97	31.65	23.39	100	
	Midwest	47.77	29.54	22.69	100	
Residence status	Urban	43.89	28.92	27.19	100	0.859
	Rural	42.91	27.47	29.62	100	
Race / color	White	45.32	25.78	28.90	100	0.534
	Black	42.51	30.97	26.52	100	
Economic strata	A1, A2, B1	56.39	2.80	40.81	100	0.013
	B2, C1,	51.67	29.66	18.66	100	
	C2, D, E	40.30	30.69	29,00	100	
Age groups	15-24	41.43	14.94	43.63	100	0.000
	25-39	49.14	25.03	25.83	100	
	40-49	38.59	50.73	10.67	100	
Conjugality	Formal union	49.05	28.66	22.30	100	0.047
	Consensual union	39.22	28.62	32.16	100	
Education	High	51.58	20.30	28.11	100	0.000
	Low	37.32	34.80	27.88	100	
Current religion	Catholic	47.38	26.82	25,80	100	0.064
	Prot. traditional	37.90	36.76	25.34	100	
	Pentecostal	49.62	32.25	18.14	100	
	Without religion	31.09	21.29	47.63	100	
	Others	39.06	35.09	25.85	100	
Number of children born alive	0	64.72	7.85	27.43	100	0.000
	1	41.94	23.79	34.27	100	
	2	23.63	55.03	21.34	100	
	3 and more	14.02	68.79	17.19	100	
Age when having 1st child	19 years	25.55	44.30	30.15	100	0.000
	20 to 30 years	38.89	30.99	30.12	100	
	30 and more	72.31	21.83	5.86	100	

Source: PNDS (2006).

would like to limit fertility. Among those who became mothers after 30 years old, more than 72% would like to have more children or had not achieved their desired fertility, and the demand for contraceptive methods was only 28%.

To determine whether the differences identified in the bivariate descriptive analysis were statistically significant, it was necessary to monitor the effect of each variable together to eliminate potential relationships between them. In this context, Table 2 presents the outcome of the multinomial logistic regression model, in which only variables significant in the chi-square test of Pearson shown in Table 1 were included. In the model, we identified associations between sociodemographic variables, economic variables, reproductive variables, the total number of children and the demand for contraceptive (women who do not have demand (reference category, 0), had a demand to limit (1) and had a demand to space (2) using nonparametric methods.

It was observed (Table 2) that the variables for marital status, education and age at which they had their first child showed no statistical significance in the multivariate analysis, perhaps because their effects were dispelled with the in-

clusion of other variables, in particular, economic strata and number of children. These variables, along with the woman's age, had the highest associations with the unmet need for contraception. In particular, regarding marital status, the study by Barros[35] noted the poor conditions of access to sexual and reproductive health among united women compared with those formally married when controlling the effect of schooling.

As demonstrated in the descriptive analysis (Table 2), it was noticed that women in economic strata B2, C, D and E were 6 times more likely to demand contraceptive methods to limit fertility compared to those belonging to economic strata A1, A2 and B1. This result corroborates other studies in which the demand for contraception, either to space or limit children, is greater among the poorest segment of women[5,14]. Higher numbers of children increased the demand for contraception, primarily the demand for definitive means of regulating fertility; women who had three or more children were 55 times more likely to have a demand for contraception compared with those women who had no children. Regarding age, it is interesting to note that women between 25 and 39 were less likely to have a contraception demand (to limit or to delay the number of children) compared to younger women. On the other hand, those who were over 40 years old were 52% more likely to have a demand to limit children than younger women, and 90% less likely to have demand to space births compared to the same previous group.

Even after controlling the effect of age and income among the groups, religion remained statistically significant in the model, indicating that traditional and Pentecostal Protestant women were 72% and 40%, respectively, more likely to have a demand for limiting births compared to Catholic women. Additionally, those without religion indicated an increased demand to space births compared to Catholic women. In contrast, Pentecostal women were 16% less likely to experience this condition than Catholic women. These findings may be related to the results found by Costa and Carvalho[36], which indicated that traditional Protestant women had a lower rate of using modern contraceptive methods compared to Catholic women. This finding would probably occur because these women have a higher frequency of cultural and religious ceremonies and therefore experience a greater influence of religious doctrine in their lives. In this case, women opted to not use modern contraceptive methods, even if their desire was to not have more children.

Table 2. Multinomial logistic regression model to identify factors associated with not having a demand for contraceptives (Reference), having a demand to space children and having a demand to limit fertility, Brazil, 2006 (n = 854).

Independent variables		Odds Ratio		P-Value
		Limit	Space	
Economic strata	A1, A2 and B1	Reference		
	B2 and C1	7,05	0,29	0,014
	C2, D and E	7,65	0,33	
Education	High	Reference		
	Low	1,27	1,04	0,759
Age groups	15-24	Reference		
	25-39	0,44	0,34	0,000
	40-49	1,52	0,10	
Marital status	Formal union	Reference		
	Consensual union	1,28	1,29	0,665
Current religion	Catholic	Reference		
	Traditional Protestant	1,72	1,17	0,085
	Pentecostal	1,40	0,88	
	Without religion	1,00	2,77	
	Others	4,00	2,17	
Number of children born alive	0	Reference		
	1	8,09	1,22	0,000
	2	28,47	1,79	
	3 and more	56,60	2,94	
Age at which 1st child was born	19 years	Reference		
	20 to 29 years	0,56	1,28	0,156
	30 years and more	0,51	0,28	

Fonte: PNDS (2006).

Final considerations

Despite the continued increase in the use of contraceptives in the country, it was noted that Brazil is far from ensuring the reproductive rights of all women, as the unmet need for planning of fertility, in the 2006 PNDS Brazilian woman who were married or united, was 8.3%. Despite showing a slight reduction from the previous decade (10.8%), this result is a very high percentage, and represents the 57% of women who did not use contraception.

The distribution of demand for contraception in the country is very different among women. The sociodemographic and economic inequalities present in many spheres of social life

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remain important in the profiles of women facing the demand for contraception in the country. Variables such as economic level, religion, and reproductive age experience reinforce inequalities in access to fertility planning. We identified a key group who need the attention of public policy in the area of fertility planning: women from lower economic strata, who are 15 to 24 years old, and need reversible contraceptive methods that can ensure the postponement of births. Women older than 40 years and women who have more than three children had a desire to limit births.

More than ten years have passed since these data were collected, which lets us know the limitation of this work and indicates a need to think about the current context of the contraceptive demand in the country. Unfortunately, no other source of data at the national level of representation was available in the most recent period to address this issue. This limitation reinforces the need for further research to encompass the theme to follow up on this indicator and glimpse the current context of access to the various contraceptive methods and possible demands by Brazilian women for planning fertility.

Another limitation of this study is not accounting for the demand for contraception among women who were not united. It is known that many of these women are sexually active and may be experiencing similar situations to those shown. It is also known that the study does not cover all the complexities surrounding the issue of implementing reproductive preferences. Therefore, it is not enough to analyze the demand for contraception by just checking the use or nonuse of contraception. There is a need to think about the suitability of different types of contraceptive methods to meet the expectations and preferences of women. It is suggested, therefore, that new research attempts to move forward on these issues.

Finally, this study reinforces that the unmet demand for contraception is a reality for many Brazilian women, and there are important differences in access to reproductive rights. This unequal access and deficit reflect both spending on public and social health and human losses, since unwanted pregnancies can lead to unsafe abortions, maternal mortality and damage to the health of mothers and children. There is therefore a need for public policies focused on reducing the unmet demand for contraception, which is a major obstacle to the successful implementation of reproductive preferences in the country.

References

1. Casterline JB, El-Zeini LO. The estimation of unwanted fertility. *Demography* 2007; 44(4):729-745.
2. Westoff CF, Ryder NB. The Predictive Validity of Reproductive Intentions. *Demography* 1977; 14(4):431-453.
3. Bradley SE, Casterline JB. Understanding unmet need: history, theory, and measurement. *Studies in family planning* 2014; 45(2):123-150.
4. Bongaarts J, Cleland J, Townsend JW, Bertrand JT, Das Gupta M. *Family Planning Programs for the 21st Century: Rationale and Design*. New York: Population Council; 2012.
5. Casterline JB, Sinding SW. Unmet need for family planning in developing countries and implications for population policy. *Popul Dev Rev* 2000; 26(4):691-723.
6. Berquó E, Cavenaghi S. Mapeamento sócio-econômico e demográfico dos regimes de fecundidade no Brasil e sua variação entre 1991 e 2000. In: *Anais do 14º Encontro Nacional de Estudos Populacionais*, 2004, Caxambu.
7. Caetano AJ. O declínio da fecundidade e suas implicações: uma introdução. In: Caetano AJ, Alves JED, Corrêa S, organizadores. *Dez anos de CAIRO: tendências da fecundidade e direitos reprodutivos no Brasil*. Campinas: ABEP/UNFPA: 2004. p. 11-19.
8. United Nations (UN). Department of Economic and Social Affairs. Population Division (2015). *Trends in Contraceptive*, *Use Worldwide*. New York: UN; 2015. (ST/ESA/SER.A/349).

9. Carvalho AA, Wong LLR, Miranda-Ribeiro P. Discrepant Fertility in Brazil: an analysis of women who have fewer children than desired (1996 and 2006). *Revista Latinoamericana de Población* 2016; (18):83-106.
10. Diniz D, Medeiros M, Madeiro A. Pesquisa Nacional de Aborto. *Cien Saude Colet* 2017; 22(2):653-660.
11. Lacerda MA, Miranda-Ribeiro P, Caetano AJ, Machado CJ. Mensuração e perfis de demanda insatisfeita por contracepção nos municípios de Belo Horizonte e Recife, 2002. *Revista Brasileira de Estudos de População* 2013; 22(1):113-129.
12. Corrêa S, Alves, JE, Jannuzzi PM. Direitos e Saúde Sexual e Reprodutiva: marco-teórico conceitual e sistema de indicadores. In: Cavenaghi S, organizadora. *Indicadores Municipais de Saúde Sexual e Reprodutiva*. Rio de Janeiro: ABEP/UNFPA; 2006. p. 63-76.
13. Bongaarts J, Judith B. The causes of unmet need for contraception and the social content of services. *Stud Fam Plann* 1995; 26(2):57-75.
14. Greene M, Joshi S, Robles O. *State of world population 2012. By choice not by chance. Family planning human rights and development*. New York: UNFPA; 2012.
15. Alves JED. As políticas populacionais e os direitos reprodutivos: o choque de civilizações versus progressos civilizatórios. In: Caetano AJ, Alves JED; Corrêa S, organizadores. *Dez anos de CAIRO: tendências da fecundidade e direitos reprodutivos no Brasil*. Campinas: ABEP/UNFPA: 2004. p. 11-19.
16. Caetano AJ, Amorim FA. Classe social, reprodução e contracepção no Brasil contemporâneo. In: Arilha M, Caetano AJ, Guedes M, Marcondes GS, organizadores. *Diálogos transversais em gênero e fecundidade*. Articulações contemporâneas. Campinas: Librum, Associação Brasileira de Estudos Populacionais; 2012. p. 17-26.
17. Perpétuo I, Wong L. Desigualdade socioeconômica na utilização de métodos anticoncepcionais no Brasil: uma análise comparativa com base nas PNDS 1996 e 2006. In: Brasil. Ministério da Saúde (MS). *Dimensões do processo reprodutivo e da saúde da criança.* Brasília: MS; 2006.
18. Farias MR, Leite SN, Tavares NUL, Oliveira MA, Arrais PSD, Bertoldi AD, Pizzol TSD, Luiza VL, Ramos LR, Mengue SS. Utilização e acesso a contraceptivos orais e injetáveis no Brasil. *Rev Saude Publica* 2016; 50(Supl. 2):1-10.
19. Tavares LS, Leite IC, Telles FSP. Necessidade insatisfeita por métodos anticoncepcionais no Brasil. *Rev Bras Epidemiol* 2007; 10(2):139-148.
20. Arilha M, Berquó E. Cairo+ 15: trajetórias globais e caminhos brasileiros em saúde reprodutiva e direitos reprodutivos. In: *Brasil, 15 anos após a Conferência do Cairo*. Rio de Janeiro: ABEP, UNFPA; 2009. p. 67-120.
21. Berquó E, Lima LP. Intenções Reprodutivas e Planejamento da fecundidade. In: Brasil. Ministério da Saúde (MS). *Relatório Final da Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher 2006*. Brasília: MS; 2008.
22. Brasil. Ministério da saúde (MS). *Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher 2006*. Brasília: MS; 2006.
23. Szwarcwald CL, Damacena GN. Amostras complexas em inquéritos populacionais: planejamento e implicações na análise estatística dos dados. *Revista Brasileira Epidemiologia* 2008; 11(Supl. 1):38-45.
24. Bradley SEK, Croft TN, Fishel JD, Westoff CF. *Revising Unmet Need for Family Planning. DHS Analytical Studies 25*. Calverton: ICF International; 2012.
25. Westoff CF. The unmet need for birth control in five Asian countries. *Fam Plann Perspect* 1978; 10(3)173-181.
26. Westoff CF, Pebley AR. Alternative measures of unmet need for family planning indeveloping countries. *Int Fam Plann Perspect* 1981; 7(4):126-136.
27. Westoff CF. The potencial demand for family planning: a new measure of unmet need and estimates for five Latin American countries. *Int Fam Plann Perspect* 1988; (14):45-53.
28. Bongarrts J. The KAP-Gap and the unmet need for contraception. *Popul Dev Rev* 1991; 17(2):293-313.
29. Westoff CF, Ochoa LH. *Unmet need and the demand for family planning. Demographic and health surveys comparative studies*. Columbia: Macro International Inc.; 1991.
30. Westoff CF. Measuring the unmet need for contraception: comment on Bongaarts. *Popul Dev Rev* 1992; (18):123-125.
31. Westoff CF, Bankole A. *Unmet need: 1990-1994. DHS Comparative Studies No. 16*. Calverton: Macro International Inc.; 1995
32. Hosmer DW, Lemeshow S. *Applied Logistic Regression*. Wiley: New York; 1989.
33. Casterline JB, Mendoza JA. Unwanted fertility in Latin America: historical trends, recent patterns. In: *Annual meeting of the Population Association of America*, Detroit, MI, USA, 2009.
34. Carvalho AA, Verona APA. Religião e fecundidade: uma análise do nível e padrão de fecundidade segundo grupos religiosos no Brasil em 2006. *Horizonte* 2014; 12(36):1086-1113.
35. Barros JVS. *Medindo a saúde reprodutiva segundo o tipo de união na América Latina: indicadores sintéticos para Brasil e México* [dissertação]. Belo Horizonte: Universidade Federal de Minas Gerais; 2012.
36. Costa IGD, Carvalho AA. Uso de contracepção por mulheres de diferentes grupos religiosos: diferenças ou semelhanças*? Horizonte* 2015; 12(36):1114-1139.

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