

# Contraception Knowledge, Attitudes and Practices of Adolescents at Risk of Pregnancy in Northeastern Brazil

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Received 9 December 2013; revised 8 January 2014; accepted 16 January 2014

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## Abstract

**Background:** Contraceptive methods (CM) are important resources in the prevention of adolescent pregnancy. This study aimed to investigate adolescent knowledge, attitudes and practices related to contraception. **Study Design:** A cross-sectional and exploratory study was conducted with 7th to 9th grade adolescents in northeastern Brazil. Their knowledge, attitudes, and contraceptive method use were analysed by gender, age and sexual initiation groups. **Results:** A sexual debut had been experienced by 21% ( $n = 120$ ) of all respondents ( $n = 570$ ). The majority of the respondents who had experienced a sexual debut were male (73.3%,  $n = 88$ ), their mean age was 15 years (SD = 1.46), and 49.3% ( $n = 59$ ) never used any CM. The participants displayed low knowledge and unfavourable and ambivalent attitudes concerning contraception. **Conclusion:** Adolescents initiate sexual intercourse with knowledge and attitudes that limit the use of CM, which makes them more at risk of pregnancy. Further research that will be representative of the specific population in need of interventions is necessary.

## Keywords

Adolescent; Contraception; Pregnancy; Attitudes

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## 1. Introduction

Adolescent pregnancy is considered one of the main factors of vulnerability that can severely affect adolescent

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development. Pregnancy has a direct cause and effect relationship with poverty and low education, which together impose limits on the opportunities that adolescents will have throughout their lives [1] [2].

In particular, because adolescent pregnancies are often unwanted, unintended and in the majority of cases do not have family or social support [3], they are associated with higher rates of injuries to maternal and newborn health when compared with adult pregnancies [4]-[6].

Furthermore, adolescent pregnancy is a condition that maintains the intergenerational cycle of poverty [1] [2]. It is more prevalent among poor adolescents with an education deficit. The children of these adolescents tend to have higher possibilities of cognitive disability and impairment in educational performance [5]. Adolescent pregnancy also tends towards repetition. Teen mothers are more likely to have a subsequent pregnancy still in adolescence, and daughters from teen mothers are more likely to become teenage mothers [7].

Given that the world's population has 1.2 billion adolescents, that there are 21 million adolescents in Brazil and the increasing incidence of girls who have become pregnant early in adolescence [1] [2] [8], it is possible to understand the social meaning of these pregnancies on the possibilities of societal development.

Thus, contraceptives constitute a major method of confronting this reality [5]. Countries with lower fertility rates have the highest prevalence of contraceptive use [4]. However, the consistent use of contraception involves several aspects that must be considered, particularly when dealing with adolescents [5] [9]-[11].

Recognising contraception as an important solution in the prevention of adolescent pregnancy and believing that the major difficulty preventing use of this resource is the adherence of adolescents themselves, this study investigates the knowledge, attitudes and practices of adolescents about contraceptive methods.

## 2. Materials and Methods

### 2.1. Study Design

This cross-sectional exploratory study was conducted in four public schools in João Pessoa city, which is located in northeastern Brazil.

### 2.2. Participants

A non-probabilistic sample was drawn with an aim of meeting the study purposes. The inclusion criteria for the selection of the schools were as follows: public schools with more than 100 teen students enrolled in the 7th and 9th grade. The adolescent selection criteria were as follows: be enrolled in one of the four schools among those that were selected and an age between 11 and 19 years.

### 2.3. Procedures

We collected data in the classroom during a time period corresponding to one lesson (50 minutes) without a teacher present. We used self-administered material consisting of three parts. The first part was a form that collected sociodemographic data, sexual and contraceptive behaviours and a self-declaration whether the adolescent knew contraceptive methods. The second part was a questionnaire with 10 multiple-choice questions (MCQ) about both basic and specific knowledge in relation to contraceptive methods. The MCQ focused on the following topics: the calendar method to birth control, the cervical mucus method (Billings method), the condom, the pill, the emergency pill, the injectable contraceptive, the IUS (intra Uterine system), the female and male sterilization (tubal ligation and vasectomy). This questionnaire was valid with a Cronbach's alpha index of 0.703. The third part involved a Likert scale consisting of 14 items related to attitudes about contraception. These items were validated with a Cronbach's alpha index of 0.700. The instruments used in the second and third parts of data collection can be accessed through at the following website:

<http://www.ccm.ufpb.br/images/documentos/instrumentodecoletadadosversaoingles.pdf>.

A database was built by using Epi Info software, version 3.5.1 (2008). The data was double-entered by different professionals.

### 2.4. Analysis

The statistical analysis was performed using STATA 10 software [12]. For data analyses, the variables of knowledge, attitudes and contraceptive methods (CM) used were analysed in relation to the variables sexual initiation,

gender and age.

Two groups were considered for the age variable based on the phase of adolescence: up to 14 years old (initial phase) and 15 years old or older (late phase). The variable sexual initiation was analysed as a dichotomous variable, allowing for adolescents with and without an experienced sexual initiation. Whether CM was used was assessed in the group of adolescents with sexual experience.

Frequencies, means and standard deviations were generated for the descriptive statistics. Chi-square analyses and *t* tests were performed to analyse the associations among the variables and to compare the means.

## 2.5. Ethical Considerations

This study was approved by the ethics committee of the University Hospital Lauro Wanderley Federal University of Paraiba under the number 328/09.

## 3. Results

### 3.1. Characteristics of Study Participants

The profile of the study participants is presented in **Table 1**. The study participants included 570 adolescents, with an almost equal distribution between males (54.7%,  $n = 312$ ) and females (45.3%,  $n = 258$ ). The participant ages ranged from 11 to 19 years, with a mean of 13.85 years (standard deviation = 1.6 years). The participants had a mean 7.89 years of education (standard deviation = 0.8 years).

### 3.2. Adolescent's Sexual Behaviour

The sample distribution according to sexual initiation for gender, age and educational level is shown in **Table 1**. Twenty-one per cent of participants ( $n = 120$ ) reported having initiated sexual life. There were statistically significant differences between groups of adolescents with and without sexual initiation regarding gender ( $p = 0.001$ ), age ( $p = 0.001$ ) and educational level ( $p = 0.018$ ). Thus, we can conclude that most teens who were sexually active were male (73.3%,  $n = 88$ ), with an age up to 15 years (60.8%,  $n = 73$ ) and between the 7th and 8th grade. Although sexual initiation is higher in males (**Table 1**), the sexual debut occurred before age 15 for most adolescents of both sexes, as seen in **Table 2**.

Of the sexually active adolescents, 49.3% ( $n = 59$ ) had never used any contraception method. Condoms were the contraceptive method most cited among those who had used some form of contraception (45%,  $n = 54$ ). Other methods used included hormonal contraception (3.3%,  $n = 4$ ) or a combination of condoms and hormonal contraception (2.4%,  $n = 3$ ). Among those who reported having used condoms, the majority were male (77.8%,  $n = 42$ ).

### 3.3. Knowledge of Contraceptive Methods

More than half of respondents (53.9%,  $n = 307$ ) stated that they did not know any contraceptive method. This

**Table 1.** Sample distribution for sexual initiation according to gender, age and years of education.

Items descriptive		No sexual initiation	Sexual Initiation	<i>p</i>
Adolescents respondents*		441 (77.4%)	120 (21.1%)	-
Gender	Male <i>n</i> (%)	218 (49.4%)	88 (73.3%)	0.001**
	Female <i>n</i> (%)	223 (50.6%)	32 (26.7%)	
Age	10 to 14 years <i>n</i> (%)	344 (78%)	42 (35%)	0.001**
	15 to 19 years <i>n</i> (%)	97 (22%)	78 (65%)	
Years of education	Mean	7.86	8.03	0.018***
	Standard Deviation	0.79	0.83	

\*1.6% ( $n = 9$ ) of the total sample did not respond to the item about their sexual initiation; \*\*Chi-square test; \*\*\* *t* test.

**Table 2.** Sexual behaviour by gender and age.

Gender	Age	Sexual Initiation <i>n</i> (%)	Never used contraception <i>n</i> (%)
Male	11 to 15	55 (62.5)	29 (65.9)
	Up 15	33 (37.5)	15 (34.5)
	Total	88 (100)	44 (100)
Female	11 to 15	18 (56.3)	09 (60.0)
	Up 15	14 (43.8)	06 (40.0)
	Total	32 (100)	15 (100)

was most evident in the female group ( $n = 154$ , 59.8%,  $p = 0.016$ ), younger adolescents ( $n = 221$ , 57.6%,  $p = 0.025$ ) and in the group of adolescents without sexual initiation ( $n = 261$ , 59.7%,  $p = 0.001$ ).

Among those who self-declared knowing some type of CM, condoms were cited by 74.5% ( $n = 190$ ), hormonal contraception was reported by 5.9% ( $n = 15$ ), and condom and hormonal contraception together were mentioned by 18.5% ( $n = 47$ ). In addition, 1.1% of respondents ( $n = 3$ ) answered “Option: other methods” and did not answer the question concerning the type of CM used. Most adolescents who mentioned knowing about condoms were male (68.4%,  $n = 130$ ). On the other hand, the majority of adolescents who knew about hormonal contraceptives were female, both for the use of hormonal contraceptives alone (86.7%,  $n = 13$ ) and in association with condom use (61.7%,  $n = 29$ ).

When assessing the teens who had started their sexual practices, we observed that 64.2% ( $n = 77$ ) of those respondents reported knowing at least some CM. Among these respondents, most stated that knew of condoms (77.9%,  $n = 60$ ); contraceptive methods were reported by 9.1% ( $n = 7$ ), combined condom and hormonal contraception use was cited by 11.7% ( $n = 9$ ), and 1.3% of these respondents ( $n = 1$ ) stated that they used other methods. Among those declaring some knowledge of CM, 23.4% ( $n = 18$ ) reported never having used any method.

Regarding the questionnaire on knowledge of specific methods, the item on the effectiveness of condoms had the highest percentage of correct answers of respondents (57%,  $n = 322$ ), and the second highest percentage of correct answers (40.7%,  $n = 231$ ) was for the item concerning knowledge of condoms and dual protection. For other items, the percentage of correct answers did not reach 25%, and the cervical mucus method (Billings) item had the lowest number of correct answers (4%,  $n = 23$ ). As shown in **Table 3**, despite the small difference, older adolescents (15 to 19 years) displayed significant superiority in the settlement of issues relating to calendar and tubal ligation methods. An analysis of the percentage of correct answers regarding contraceptive methods according to sexual practice revealed no differences between the with and without sexual initiation groups. Considering gender also there were no differences in the answers to the MCQ.

### 3.4. Adolescent Attitudes about Contraception

**Table 4** shows the distribution of results regarding the sexual experience of the respondents and the evaluation of the attitudes of adolescents related to contraception. The largest percentage of adolescents with positive attitudes were those who agreed with the following statements: CM should be a concern of the couple (89.7%,  $n = 507$ ), CM should be known before initiating sexual activity (84.5%,  $n = 474$ ), pregnancy is more fattening than any CM (62.9%), CM give you more sexual freedom (60.5%,  $n = 340$ ), and there is no difficulty in using CM (57.4%,  $n = 324$ ).

The items with the lowest percentages of recorded favourable attitudes to contraception correspond to the association of use of CM with the seriousness of the relationship ( $n = 94$ ) and the negative effects of HC including increased weight (21.7%,  $n = 123$ ), impaired future fertility (24.1%,  $n = 137$ ), or injury on general health (28.1%,  $n = 158$ ). In addition, whereas 89.8% ( $n = 507$ ) of adolescents agreed that contraception should be a concern of the couple, only 35.6% ( $n = 201$ ) of them disagreed that contraception is a concern exclusive to women.

Considering the significant differences between the groups with and without sexual initiation, **Table 4** shows that among sexually active adolescents, the percentage of those who deny that there is difficulty talking about

**Table 3.** Distribution of correct answers on the knowledge questionnaire about contraceptive methods by age and sexual initiation.

Contraceptive Methods	Age				P	Sexual Initiation				P
	10 - 14 years	n(%)	15 - 19 years	n(%)		No	n(%)	Yes	n(%)	
Dual protection of condom	152 (39.1)		79 (44.4)		0.23	174 (39.6)		54 (45.4)		0.26
Condom-Effectiveness	229 (59.0)		93 (52.5)		0.15	248 (56.6)		68 (57.6)		0.85
Calendar method	35 (9.0)		27 (15.2)		0.03	42 (9.6)		18 (15.3)		0.08
Cervical mucus method (Billings)	17 (4.4)		06 (3.4)		0.58	15 (3.4)		08 (6.7)		0.11
Oral contraceptive	63 (16.3)		27 (15.3)		0.78	65 (14.9)		22 (18.6)		0.32
Emergency pill	58 (14.8)		32 (18)		0.34	70 (15.9)		19 (15.8)		0.98
Injectable contraceptive monthly	75 (19.1)		33 (18.8)		0.91	79 (17.9)		24 (20.3)		0.55
IUS	79 (20.2)		39 (21.9)		0.64	95 (21.5)		22 (18.5)		0.47
Tubal ligation	85 (21.8)		53 (30.3)		0.03	100 (22.9)		36 (30.3)		0.10
Vasectomy	85 (21.7)		38 (21.7)		0.99	93 (21.1)		28 (23.9)		0.52

IUD—Intra Uterine Sistem.

**Table 4.** Percentage of favourable attitudes about contraception and its distribution according to sexual initiation.

Likert scale items	Favourable attitudes						Difference regarding to SI
	Total adolescents (n= 570)		No Sexual debut (n= 441)		Sexual Debut (n= 120)		
	%	(n)	%	(n)	%	(n)	$\chi^2$ (p)
It is hard to acquire birth control methods.	46.7	(265)	46.1	(202)	48.3	(58)	0.667
The sex with a condom is not good.	43.8	(249)	43.3	(190)	46.7	(56)	0.862
Using a method of birth control indicates a lack of confidence in your partner.	48.3	(274)	47.5	(208)	52.5	(63)	0.330
Using methods of birth control increases commitment in the relationship.	16.6	(94)	16.4	(72)	17.6	(21)	0.754
I have difficulty talking about sex with my friends.	53.7	(304)	50	(219)	66.7	(80)	0.001
Hormonal contraceptives (pill or injection to birth control) affect female health.	28.1	(158)	26.9	(117)	31.7	(38)	0.302
The hormonal contraceptive is fattening.	21.7	(123)	21	(92)	25.2	(30)	0.325
After using contraceptive methods, it is difficult to become pregnant.	24.1	(137)	23.6	(104)	26.9	(32)	0.463
Birth control should be a female concern.	35.6	(201)	35.6	(156)	36.1	(43)	0.917
Birth control methods provide more sexual freedom.	60.5	(340)	56.4	(246)	73.7	(87)	0.001
Pregnancy is more fattening than the use of hormonal Contraceptives.	62.9	(352)	62.2	(272)	65.2	(75)	0.557
Birth control should be the responsibility of the couple.	89.7	(507)	90.2	(396)	88.1	(104)	0.519
It is important to know the methods of birth control even before starting sexual life.	84.5	(474)	83.6	(366)	87.8	(101)	0.261
There are no difficulties with using birth control methods.	57.4	(324)	55.3	(242)	64.4	(76)	0.074

SI—Sexual Initiation.

sex with friends ( $p = 0.001$ ) and who agree that the use of CM gives more sexual freedom sexual ( $p = 0.001$ ) is higher.

The percentage of favourable attitudes about contraception and its distribution according to gender was not statistically significant.

The relationship between attitudes and age is shown in **Table 5**. For the importance in knowing CM before sexual initiation item, the favourable attitudes were significantly higher in the older adolescent group ( $p = 0.026$ ). There was no significant difference between the age groups for the other items.

#### 4. Discussion

Among the major regions of Brazil, the highest rate of education discrepancies is found in the northeast. The average school delay estimated for the country is 1.1 years, but the delay is 1.4 years in the northeast [13] [14]. In addition, the northeastern adolescents in this study were from low-income families, and they were mostly in early adolescence. Based on these factors, they are included in the group of adolescents who are more at risk of pregnancy [1]. These findings are even more relevant because we found that younger girls and pre-sexual debut girls represented the principal groups that lacked knowledge of any CM.

Similar to a survey of American teenagers [15], in Brazil, studies indicate an increasing percentage of boys and girls who initiate sex before the age of 15 [16]. Moreover, the age at which adolescents in this study declared themselves sexually active reflects both the reality of the earliness of sexual initiation and the relevance of contraceptive orientation in the initial phase of adolescence.

The high percentage of sexually active teens that never used any contraceptive method strengthens the evidence that at this age, sexual activity is often unprotected and often occurs without permission or without contraceptive orientation [5] [17].

As in other studies [18]-[20], condom use was the most common contraceptive method revealed in this present study. When use of condoms is analysed in terms of gender, our findings reinforces the evidence of condom use is significantly higher among male adolescents [21]-[23]. Considering that the condom is an option whose

**Table 5.** Percentage of favourable attitudes about contraception by age groups.

Likert scale items	Favourable attitudes				
	10 - 14 years	<i>n</i> (%)	15 - 19 years	<i>n</i> (%)	<i>p</i>
It is hard to acquire birth control methods.	181	(46.3)	84	(47.1)	0.751
The sex with a condom is not good.	184	(47.1)	65	(36.7)	0.177
Using a birth control method control indicates a lack of confidence in your partner.	189	(48.5)	85	(48)	0.923
Using birth control methods increases commitment in the relationship.	68	(17.4)	26	(14.9)	0.454
I have difficulty talking about sex with my friends.	205	(52.7)	99	(55.9)	0.475
Hormonal contraceptives (pill or injection to birth control) affect female health.	107	(27.7)	51	(28.8)	0.789
The hormonal contraceptive is fattening.	93	(23.8)	30	(17)	0.069
After contraceptive methods are used, it is difficult to become pregnant.	95	(24.3)	42	(23.7)	0.884
Birth control should be a female concern.	137	(35.3)	64	(36.2)	0.845
Birth control methods provide more sexual freedom.	224	(58)	116	(65.9)	0.076
Pregnancy is more fattening than the use of hormonal contraceptives.	240	(62)	112	(64.7)	0.538
Birth control should be the responsibility of the couple.	344	(88.4)	163	(92.6)	0.129
It is important to know the methods of birth control even before starting sexual life.	319	(82.2)	155	(89.6)	0.026
There are no difficulties with using birth control methods.	220	(56.7)	104	(59.1)	0.595

effectiveness depends on the discipline of users and contraception orientation from relations, which is not a reality of teen sexual practices, we can infer that even teens who say they use some method are exposed to a unplanned pregnancy. This inference is reinforced by various studies that indicate that even when contraception is used, adolescents frequently use a less effective method, such as condoms [5], and even when using other methods, adolescents use the chosen method in an irregular or inconsistent way. This problem is in addition to the many obstacles they face when choosing to use contraception [5] [24]-[27].

Cognitive competence has been identified as an important predictor of sexual and reproductive health [5] [28]. Indeed, our results suggest that adolescents have little knowledge about CM. Even the superficial assessment of who knows or do not know about CM reveals a lack of adolescent knowledge about contraception. This lack of knowledge was confirmed by the low accuracy percentage observed in the MCQ.

These results indicate that even after initiation of sexual activity, there is no increase in adolescent knowledge of CM. Even among adolescents who declared knowledge of CM, there were a large number who have never used CM. These results reveal that adolescents are starting their sexual practices without enough knowledge to enable them to use contraception. These data reinforce the evidence that sexual initiation does not promote knowledge and use of CM. It is also consistent with a study that highlights the missed opportunities when it is expected to delay contraceptive orientation until adolescents become older or start a romantic or sexual relationship [29].

Positive attitudes towards CM are most likely related to the use of CM by adolescents [30] [31], and ambivalence is related to pregnancy and contraception [32] [33]. In our study, regardless of the age or sexual activity, most adolescents considered oral contraceptives harmful to health, fertility, or aesthetics (*i.e.*, increased weight gain). In addition, most of them reported that contraception interferes negatively with the affective-sexual relationship. These associations are reflected in factors limiting the use of CM by adolescents who see contraception as something negative that can harm them [9] [34]. In addition, ambivalent attitudes were observed. The adolescents both agreed that contraception is an exclusive concern of women and also agreed that contraception is the responsibility of the couple. Both the item “Pregnancy gain results in more weight gain than the use of hormonal contraceptives” and items that relate hormonal contraceptives with weight gain, impairment of health and fertility obtained the agreement of the majority of respondents. This evident ambivalence that adolescents have about contraception combined with the minimal amount of knowledge as indicated in this study suggests the low probability that these adolescents are prepared and motivated to use contraception.

Although the sample is not representative for a population-based study and does not allow for generalisation, the profile of participants displays the common characteristics of the strata of Brazilian adolescents in which there is the increasing prevalence of teenage pregnancy. In addition, the results reported contribute to highlighting that those adolescents at risk of pregnancy need programs to enable and motivate them to use contraception consistently and regularly.

## 5. Final Considerations

Adolescents in northeastern Brazil, with social conditions similar to those groups at greater risk of pregnancy in adolescence, have initiated their sexual activity with knowledge and attitudes that limit the use of CM.

Even after sexual initiation, adolescents have little knowledge about the main contraceptive methods and possess ambivalent and unfavourable attitudes towards the use of contraception. The knowledge, attitudes and practices of the both sexually active adolescents and adolescents who are likely to start their sexual practices suggest that there is a predisposition not using contraception. These data indicate a greater risk of unplanned pregnancy for these adolescents. We hope our results will contribute to the development of further studies that will be representative of the specific population in need of urgent intervention.

## Conflict of Interest

None of the authors have any conflicts of interest to disclose.

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## List about the Abbreviations

MCQ—Multiple-Choice Questions;  
MC—Contraceptive Methods;  
IUS—Intra Uterine System.