

**Sociodemographic, sexual, reproductive and relationship characteristics of adolescents having an abortion in Portugal: A homogeneous or a heterogeneous group?**

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## Abstract

**Objectives:** The aims of the study were to describe the sociodemographic, sexual, reproductive and relational characteristics of adolescents having an abortion in Portugal and to explore the differences

between three adolescent age groups. **Methods:** We recruited a nationally representative sample of 224 adolescents (<16 years,  $n = 18$ ; 16-17 years,  $n = 103$ ; 18-19 years,  $n = 103$ ) who had an abortion. Data were collected from 16 health care services that provide abortion. **Results:** The adolescents were predominantly single, were from non-nuclear families, had low-socioeconomic status and were students. Mean age at first sexual intercourse was 15 years and mean gynaecological age was 5 years. Most had had multiple sexual partners, and for most it was their first pregnancy. At conception, the majority were involved in a long-term romantic relationship, were using contraception but did not identify the contraceptive failure that led to the pregnancy. Significant age group differences were found. Compared with the younger age groups, the 18-19 years age group was more frequently married or living with a partner, had finished school, had attained a higher educational level (as had their partner), intended to go to university, and had a greater number of sexual partners. Compared with the other groups, those under 16 years of age reported earlier age at menarche and at first sexual intercourse, and had a lower gynaecological age. **Conclusions:** Our study characterises the life contexts of Portuguese adolescents who had an abortion. It highlights the need to recognise the heterogeneity of this group according to age. The findings have important implications for the development of age-appropriate guidelines to prevent unplanned pregnancy.

**Keywords:** abortion, adolescents, age differences, contraception.

## Introduction

European Union countries that allow abortion on request report an annual rate of 12.2 abortions per 1000 women aged <20 years. Portugal has one of the lowest adolescent abortion rates (Silva et al., 2011). Since 2007, Portuguese women have been legally able to request an abortion during the first 10 weeks of gestation. It is estimated that since then more than 35% of pregnant Portuguese adolescents have decided to terminate a pregnancy (PORDATA, 2013), representing 11% of all legal abortions performed in Portugal (Directorate-General of Health [DGH], 2016). Despite the large body of international research describing the characteristics of women who have had an abortion, few studies have focused on adolescents (Silva et al., 2011), and most have reported contradictory results. This may be due to the fact that adolescents' sexual and reproductive health is largely dependent on their sociocultural environment (World Health Organization [WHO], 2006). However, little is known about the adolescents who have undergone an abortion in Portuguese sociocultural context.

The literature shows that adolescents who terminate a pregnancy are predominantly single, of low socioeconomic status, live in an urban environment and are students. Their decision to have an abortion is related to aspirations and their desire for academic success (Helström, Zätterström, & Odling, 2006). As regards family structure, i.e., living or not living in a nuclear family, studies have produced mixed results (Evans, 2001; Felton, Parsons, & Hassell, 1998). There have been significant discrepancies in the prevalence rates of previous childbirth and abortion (Moreau, Trussell, & Bajos, 2012; Singh, Fong, & Loh, 2002). While some studies have shown that adolescents were not using contraception at the time of conception (Helström et al., 2006), others have reported the opposite, highlighting the importance of contraceptive misuse or failure (e.g., condom rupture, forgetting to take the pill) in the occurrence of unplanned pregnancy (Moreau et al., 2012). Notwithstanding the relevance of the partner's characteristics in reproductive decisions (Sihvo, Bajos, Ducot, & Kaminski, 2003), the few studies that have focused on the relationship context of adolescent pregnancies ending in abortion have also produced inconsistent results about the nature of the relationship, i.e., casual or romantic, and their partner's characteristics, such as educational level and occupation (Helström et al., 2006; Sihvo et al., 2003; Singh et al., 2002).

Despite the relevance of the existing research, all the reviewed studies treat adolescents who have had an abortion as a homogeneous group and do not take into consideration any discrepancies between different age groups. This may also explain the inconsistent results found across studies. To our knowledge, only one study about adolescent abortion compared age groups (<16 years, 16-17 years and 18-19 years; Leppälähti, Gissler, Mentula, & Heikinheimo, 2012) and it concluded that the rates of abortion and repeat abortion were higher among older adolescents. Other age differences remain unexplored among adolescents who have terminated a pregnancy. There is therefore a need for further research into the characteristics of the

adolescent population seeking abortion, in order to develop age-appropriate guidelines for pregnancy prevention and abortion counselling. Our study aimed to: (1) describe the sociodemographic, sexual, reproductive and relational characteristics of a nationally representative sample of adolescents who have had an abortion in Portugal; and (2) explore the differences between three age groups: <16, 16-17 and 18-19 years.

## Methods

### Procedure and participants

The study sample was collected between September 2013 and September 2014 at 16 health care services that provide abortion, under the approval of the respective research ethics committees. The inclusion criteria were as follows: (1) an abortion was provided on request; (2) the study participant was between 10 and 19 years old (the World Health Organization's definition of adolescence (WHO, 1975); and (3) the study participant was able to understand and answer the data sheet. Adolescents were invited to participate in the study by a health care provider after the decision to perform an abortion had been made, i.e., during the medical appointment prior to the abortion procedure. Adolescents were informed about the study goals, and those who agreed to participate provided written informed consent. When participants were under 16 years of age (the age when adolescents no longer need parental or legal guardian consent to terminate a pregnancy; Assembly of the Republic [AR], 2007), the consent form was also signed by their parent or legal guardian. The adolescents were instructed to answer the data sheet during the week of their post-abortion follow-up appointment (~ 2-3 weeks later) and to return it to the health care provider in a sealed envelope without any identification.

Using a non-probabilistic convenience sampling method, 233 adolescents were recruited. However, nine (one below 16 years of age and eight in the 18- to 19-year-old group; 4.02%) were excluded because they returned an incomplete data sheet (>20% missing data). The final sample consisted of 224 adolescents aged 14-19 years. Three age groups were then defined: <16 years ( $n = 18$ , 8.0%), 16-17 years ( $n = 103$ , 46.0%) and 18-19 years ( $n = 103$ , 46.0%). The age groups were defined according to previous studies that pregnancy outcomes were analysed in adolescents (Leppälahti et al., 2012; Phipps et al., 2008; Phipps & Sowers, 2002). We also took into consideration several Portuguese legal issues that may lead to different sexual and reproductive experiences for adolescents, some of them in the context of abortion. Specifically, and according to Portuguese law, adolescents under the age of 16 need consent from a parent or legal guardian to terminate a pregnancy (AR, 2007). Age <16 years has been defined as early adolescent childbearing (Phipps & Sowers, 2002). Moreover, Portugal has one of the higher rates in Europe of abortion in adolescents aged <15 years (Silva et al., 2011), which stresses the need

to understand the characteristics of this group. From the age of 16, adolescents are allowed to marry with the consent of a parent or legal guardian, but they may decide to terminate a pregnancy without parental consent. Adolescents reach legal majority at the age of 18 years (AR, 1978), although they continue to be considered as adolescents until the age of 19 (DGH, 2012; WHO, 1975). Thus, according to Portuguese law, adolescents receive different treatment depending on their age. To our knowledge, however, no studies have explored the characteristics of each age group in the context of abortion.

Official data do not provide the number of abortions performed in each age group used in our sample, but only the number of abortions performed in adolescents aged <15 years ( $n = 82$ , 3.54%) and in those aged between 15 and 19 years ( $n = 2234$ , 96.46%; DGH, 2012). According to these data, the youngest group represents a small percentage of all abortions performed in adolescents, as was the case in our sample. This may explain the large differences in sample sizes among age groups. Based on the age variable, the sample collected ( $n = 224$ ) was nationally representative of adolescents (<20 years old) having an abortion in Portugal. For this calculation, it was established a margin of error of 4% and a confidence level of 95%. A minimum number of 71 adolescents was needed in order to have a representative sample of 2316 abortions performed in Portugal in women aged <20 years (Alferes, 2002; DGH, 2012).

## Measures

Sociodemographic, sexual, reproductive and relational characteristics were obtained through a data sheet specifically developed by the researchers for this project using open and closed-ended questions. This data sheet was adapted from the clinical assessment interview for pregnant adolescent patients of the Psychological Intervention Unit of the Maternity Daniel de Matos, HUC (Araújo Pedrosa, Canavarro, & Pereira, 2003).

### *Sociodemographic characteristics*

Participants provided information on age, ethnic origin, marital status, family structure, socioeconomic status, place of residence, occupation, educational level, grade repetition and educational aspirations.

### *Sexual and reproductive characteristics*

Participants provided information on age at menarche, age at first sexual intercourse, number of sexual partners, gynaecological age, previous abortion and childbirth, contraceptive use at conception, and, for those who used contraception, identification of contraceptive failure. They also provided information on the gestational age and the abortion procedure.

### *Relational characteristics*

Participants provided information on relationship type and length at the time of conception, age difference with their partner, and the partner's occupation and educational level.

### Data analysis

All data analyses were conducted using SPSS Statistics software, version 22.0 (IBM, Armonk, NY). Descriptive statistics (means, standard deviations [SDs] and frequencies) were used for characterisation purposes. Comparison tests were performed to identify between-group differences in sociodemographic, sexual and reproductive, and relational characteristics. For continuous variables, Kruskal-Wallis tests and post hoc Mann-Whitney *U*-tests with Bonferroni correction were used. For categorical variables,  $\chi^2$  tests with Monte Carlo correction for cells with frequencies <5 were used.

## Results

### Sociodemographic characteristics

Table 1 shows that the adolescents were predominantly of European ethnic origin, single, from non-nuclear families of low socioeconomic status and living in a town or city. The majority were students, had an educational level between the 10<sup>th</sup> and 12<sup>th</sup> grades, had repeated one grade, and intended to pursue higher education. No differences were found between the age groups regarding ethnic origin, family structure, socioeconomic status, place of residence or grade repetition. However, compared with the under-16 and 16-17-year age groups, the adolescents aged 18-19 years more frequently reported being married or living with a partner and having a higher educational level. They were also more likely to report dropping out of school. However, about 57% intended to pursue higher education.

**Table 1** | Sociodemographic characteristics of adolescents who had had an abortion; comparison between age groups

	Total sample ( <i>n</i> = 224)	Under 16 years old ( <i>n</i> = 18)	16-17 years old ( <i>n</i> = 103)	18-19 years old ( <i>n</i> = 103)	$\chi^2(U)/ U(I)$	<i>p</i> - value
<b>Age</b>						
<i>M (SD)</i>	17.33 (1.34)	14.61 (0.50)	16.58 (0.49)	18.55 (0.50)		
<b>Ethnic origin, <i>n</i> (%)</b>						
European ethnic origin	184 (82.1)	18 (100.0)	82 (79.6)	84 (81.6)	3.64(.13)	.162
Non-European ethnic origin	31 (13.8)	0 (0.0)	17 (16.5)	14 (13.6)		
Missing	9 (4.0)	0 (0.0)	4 (3.9)	5 (4.9)		
<b>Marital status, <i>n</i> (%)</b>						
Single	210 (93.8)	18 (100.0)	101 (98.1)	91 (88.3)	9.59(.21)	.008
Married/living with a partner	14 (6.3)	0 (0.0)	2 (1.9)	12 (11.7)		
<b>Family structure, <i>n</i> (%)<sup>a</sup></b>						
Non-nuclear	127 (56.7)	11 (61.1)	51 (49.5)	65 (63.1)	4.36(.13)	.144
Nuclear	96 (42.9)	7 (38.9)	52 (50.5)	37 (35.9)		
Missing	1 (0.4)	0 (0.0)	0 (0.0)	1 (1.0)		
<b>Socioeconomic status, <i>n</i> (%)<sup>b</sup></b>						
Low	158 (70.5)	16 (88.9)	70 (68.0)	72 (69.9)	6.93(.18)	.139
Medium/High	63 (28.1)	2 (11.1)	33 (32.0)	28 (27.2)		
Missing	3 (1.3)	0 (0.0)	0 (0.0)	3 (2.9)		
<b>Place of residence, <i>n</i> (%)<sup>c</sup></b>						
Urban	167 (74.6)	12 (66.7)	78 (75.7)	77 (74.8)	1.70(.09)	.428
Rural/Suburban	46 (20.5)	6 (33.3)	19 (18.4)	21 (20.4)		
Missing	11 (4.9)	0 (0.0)	6 (5.8)	5 (4.9)		
<b>Occupation, <i>n</i> (%)</b>						
Student	196 (87.5)	18 (100.0)	97 (94.2)	81 (78.6)	13.45(.17)	.009
Employed	7 (3.1)	0 (0.0)	1 (1.0)	6 (5.8)		
Unemployed	20 (8.9)	0 (0.0)	5 (4.9)	15 (14.6)		
Missing	1 (0.4)	0 (0.0)	0 (0.0)	1 (1.0)		
<b>Educational level (years in school), <i>n</i> (%)</b>						
5-6 years	3 (1.3)	1 (5.6)	2 (1.9)	0 (0.0)	49.13(.35)	.000
7-9 years	52 (23.2)	10 (55.6)	29 (28.2)	13 (12.6)		
10-12 years	120 (53.6)	4 (22.2)	60 (58.3)	56 (54.4)		
≥ 13 years	26 (11.6)	0 (0.0)	1 (1.0)	25 (24.3)		
Missing	23 (10.3)	3 (16.7)	11 (10.7)	9 (8.7)		
<b>Grade Repetition</b>						
<i>M (SD)</i>	1.21 (1.12)	1.24 (1.30)	1.42 (1.24)	0.99 (0.91)	4.90(.02)	.086
<i>Range</i>	0-6	0-4	0-6	0-3		
<b>Length of intended study, <i>n</i> (%)<sup>e</sup></b>						
Middle School	7 (3.1)	2 (11.1)	5 (4.9)	0 (0.0)	26.78(.24)	.001
High School	70 (31.3)	8 (44.4)	39 (37.9)	23 (22.3)		
University	121 (54.0)	7 (38.9)	55 (53.4)	59 (57.3)		
No further study	25 (11.2)	1 (5.6)	4 (3.9)	20 (19.4)		
Not known	1 (0.9)	0 (0.0)	0 (0.0)	1 (1.0)		

*Note.* <sup>a</sup>The family structure was classified as nuclear family (families in which both biological parents lived with the adolescent) and non-nuclear family (mother only, father only, other configuration). <sup>b</sup>Socioeconomic status (SES) was derived from the educational level and occupation of the family's main provider according to Portuguese standard procedures (i.e., low (e.g., non-specialized workers), medium (e.g., small business owners, high school teachers) and high (e.g., governmental or private companies' administrators, lawyers) (Simões, 1994). Because the high SES category only contained 10 (4.5%) adolescents, this variable was coded as low or medium/high. <sup>c</sup>The place of residence was assessed with the question, "Where do you live (location)?" and was classified as urban (population density exceeding 500 inhabitants/km<sup>2</sup>) or rural/suburban (population density less than 500 inhabitants/km<sup>2</sup>).<sup>20</sup> <sup>d</sup>Educational aspirations were assessed with the question "How long do you want to study?", and were classified as middle school, high school, university, does want study no longer, and does not know.

**Table 2** | Sexual and reproductive characteristics of adolescents who had an abortion and comparison between age groups

	Total sample ( <i>n</i> = 224)	Under 16 years old ( <i>n</i> = 18)	16-17 years old ( <i>n</i> = 103)	18-19 years old ( <i>n</i> = 103)	$\chi^2(N)/ U(n)$	<i>p</i> - value
Age at menarche						
<i>M (SD)</i>	12.14 (1.63)	10.94 (1.31)	12.03 (1.37)	12.45 (1.81)	15.44(.07)	
Range	8-17	8-13	9-15	8-17	14-15<16-17(.07); 14-15<18-19(.10); 16-17<18-19(.02)	.000
Age at first sexual intercourse						
<i>M (SD)</i>	15.39 (1.37)	13.94 (1.09)	15.07 (1.22)	15.97 (1.27)	39.82(.18)	
Range	11-19	12-15	11-17	13-19	14-15<16-17(.11); 14-15<18-19(.23); 16-17<18-19(.10)	.000
Number of sexual partners						
<i>M (SD)</i>	2.17 (1.26)	1.35 (0.79)	2.01 (1.19)	2.49 (1.31)	20.72(.10)	
Range	1-7	1-4	1-7	1-7	14-15<16-17(.07); 14-15<18-19 (.15); 16-17<18-19(.05)	.000
Gynecological age <sup>a</sup>						
<i>M (SD)</i>	5.20 (1.82)	3.67 (1.37)	4.25 (1.40)	5.98 (1.80)	51.79(.24)	
Range	0-10	1-7	0-8	3-10	14-15<16-17(.05); 14-15<18-19(.21); 16-17<18-19(.19)	.000
Previous induced abortions, <i>n</i> (%)						
No	208 (92.9)	18 (100.0)	98 (95.1)	92 (89.3)	4.14(.14)	.126
Yes	16 (7.1)	0 (0.0)	5 (4.9)	11 (10.7)		
Previous childbirth, <i>n</i> (%)						
No	220 (98.2)	18 (100.0)	103 (100.0)	99 (96.1)	4.78(.15)	.091
Yes	4 (1.8)	0 (0.0)	0 (0.0)	4 (3.9)		



Contraception use at conception, <i>n</i> (%)						
No	60 (26.8)	9 (50.0)	26 (25.2)	25 (24.3)		
Yes	164 (73.2)	9 (50.0)	77 (74.8)	78 (75.7)	5.40(.16)	.067
Type of contraception used at conception, <i>n</i> (%)						
Condom	91 (55.5)	7 (77.8)	45 (58.4)	39 (50.0)		
The pill	54 (32.9)	1 (11.1)	25 (32.5)	28 (35.9)		
Dual protection	13 (7.9)	1 (11.1)	3 (3.9)	9 (11.5)	7.49(.15)	.485
Implant	1 (0.6)	0 (0.0)	1 (1.3)	0 (0.0)		
Not stated	5 (3.0)	0 (0.0)	3 (3.9)	2 (2.6)		
Identification of contraceptive failure, <i>n</i> (%)						
No	103 (62.8)	4 (44.4)	51 (66.2)	48 (61.5)		
Yes	61 (37.2)	5 (55.6)	26 (33.8)	30 (38.5)	6.74(.12)	.150
Gestational age, weeks						
<i>M</i> ( <i>SD</i> )	6.92 (1.45)	6.94 (1.25)	7.01 (1.48)	6.84 (1.47)		
Range	4-10	5-9	4-10	4-10	.68(.00)	.712
Induced abortion procedure, <i>n</i> (%)						
Medical	184 (82.1)	14 (77.8)	83 (80.6)	87 (84.5)		
Surgical	30 (13.4)	4 (22.2)	16 (15.5)	10 (9.7)	2.49(.11)	.288
Missing	10 (4.5)	0 (0.0)	4 (3.9)	6 (5.8)		

*Note.* <sup>a</sup>Gynecological age was computed by subtracting the age at menarche from the age at conception.

## Sexual and reproductive characteristics

The mean age at menarche was 12 years old; adolescents engaged in sexual intercourse for the first time, on average, 3 years later. The mean gynaecological age was 5 years. Most adolescents had multiple sexual partners ( $n = 2.17$ ,  $SD = 1.26$ ), and for most this was their first pregnancy. The majority became pregnant while using contraception, but did not identify the contraceptive failure that led to the pregnancy. Those who did identify contraceptive failure reported condom rupture ( $n = 37$ , 60.7%), forgetting to take the pill ( $n = 17$ , 27.9%) and taking antibiotics with the pill ( $n = 3$ , 4.9%). The majority of adolescents who did not use contraception at the time of conception did not identify the reason for non-use of contraception ( $n = 51$ , 85.0%). Those who did, reported reasons such as "did not have an active sexual life/boyfriend" ( $n = 2$ , 3.3%), "forgot to use contraception" ( $n = 2$ , 3.3%), "did not want/like to use it" ( $n = 1$ , 1.7%), "my boyfriend did not want to use contraception" ( $n = 1$ , 1.7%), "I had no access to contraception" ( $n = 1$ , 1.7%), "I was waiting to start to take the pill" ( $n = 1$ , 1.7%) and "I had side effects from contraception" ( $n = 1$ , 1.7%). Mean gestational age at the time of abortion was 7 weeks; most adolescents received a medical abortion. No age differences were found regarding history of abortion or childbirth, use or type of contraception at conception, identification of contraceptive failure, gestational age or abortion procedure. However, those under 16 years reported earlier age at menarche ( $U = 514.00$ ,  $p = 0.004$ ;  $U = 451.50$ ;  $p < 0.001$ ), at first sexual intercourse ( $U = 416.50$ ,  $p < 0.001$ ;  $U = 203.50$ ,  $p < 0.001$ ) and a lower gynaecological age ( $U = 573.00$ ,  $p = 0.016$ ;  $U = 250.00$ ,  $p < 0.001$ ) compared with the other groups (Table 2). The 18- to 19-year-old group reported a higher number of sexual partners ( $U = 316.50$ ,  $p < 0.001$ ;  $U = 3279.50$ ,  $p = 0.003$ ) compared with the other two groups.

## Relationship characteristics

At conception, the majority of adolescents were involved in a long-term romantic relationship ( $M = 13.00$  months,  $SD = 11.36$ ) with an older partner who was in school and had an educational level between the 10th and 12th grades. No age differences were found regarding the type or length of the relationship with the partner at conception, or between the adolescent and the partner, or the partner's occupation. However, the 18- to 19-year-old group reported the highest educational level for their partner in relation to the other groups (Table 3).

**Table 3 |** Relational characteristics of adolescents who had had an abortion and comparison between age groups

	Total sample ( <i>n</i> = 224)	Under 16 years old ( <i>n</i> = 18)	16-17 years old ( <i>n</i> = 103)	18-19 years old ( <i>n</i> = 103)	$\chi^2(V)/ U(n)$	<i>p</i> - value
Romantic relationship at conception, <i>n</i> (%)						
No	7 (3.1)	1 (5.6)	1 (1.0)	5 (4.9)	2.95(.12)	.229
Yes	217 (96.9)	17 (94.4)	102 (99.0)	98 (95.1)		
Relationship length, months						
<i>M</i> ( <i>SD</i> )	13.00 (11.36)	9.41 (8.64)	11.91 (9.06)	14.85 (13.61)	3.99(.02)	.136
Range	1-84	1-36	1-48	1-84		
Age difference between adolescent and her partner <sup>a</sup>						
<i>M</i> ( <i>SD</i> )	2.75 (3.35)	2.53 (1.01)	2.67 (2.86)	2.86 (4.01)	.978(.00)	.613
Range	-2-27	1-4	-2-27	-2-27		
Partner's Occupation, <i>n</i> (%)						
Student	110 (49.1)	7 (38.9)	58 (56.3)	45 (43.7)	11.31(.16)	.079
Employed	39 (17.4)	1 (5.6)	14 (13.6)	24 (23.3)		
Unemployed	23 (10.3)	4 (22.2)	7 (6.8)	12 (11.7)		
Does not know	52 (23.2)	6 (33.3)	24 (23.3)	22 (21.4)		
Partner's Educational level, years in school (%)						
5-6 years	9 (4.0)	0 (0.0)	2 (1.9)	7 (6.8)	33.12(.28)	.000
7-9 years	61 (27.2)	11 (61.1)	34 (33.0)	16 (15.5)		
10-12 years	110 (49.1)	3 (16.7)	51 (49.5)	56 (54.4)		
≥13 years	20 (8.9)	0 (0.0)	4 (3.9)	16 (15.5)		
Does not know	24 (10.7)	4 (22.2)	12 (11.7)	8 (7.8)		

*Note.* <sup>a</sup>The partners' age difference was computed by subtracting the female's age from her partner's age.

## Discussion

### Findings and interpretation

Our results are consistent with previous research showing that adolescents who have an abortion are predominantly single, have low socioeconomic status, live in towns or cities (Mavroforou, Koumantakis, & Michalodimitrakis, 2004), and are from non-nuclear families (Felton et al., 1998). The majority are high school students (Helström et al., 2006) and intend go on to higher education. The mean age at menarche is 12 years; most adolescents engage in first sexual intercourse, on average, 3 years later and have multiple sexual partners. Non-nuclear family structures have been related to low parental supervision, which increases adolescents' likelihood of engaging in risky behaviours (Brauner-Otto & Axinn, 2010), as well as having multiple sexual partners (Davies et al., 2006).

Although the literature has presented significant discrepancies between previous childbirth and abortion (Moreau et al., 2012; Singh et al., 2002), for the majority of the adolescents in our study this was their first pregnancy. Furthermore, our findings highlight that pregnancy occurs not only through non-use but also through inconsistent or incorrect use of contraception. Although the majority of adolescents were using contraception, it did not prevent the occurrence of an unplanned pregnancy. Thus, our results stress the importance of identifying contraceptive failure that leads to unplanned pregnancy (Helström et al., 2006; Moreau et al., 2012) and adoption of preventive behaviours. However, the majority of the adolescents did not identify the contraceptive failure. Those who did report detectable faults, such as condom rupture and forgetting to take the pill, did not adopt effective alternative contraceptive behaviours to prevent the occurrence of pregnancy.

Regarding the adolescents who did not use contraception, most did not justify this behaviour. Those who did, reported occasional sexual intercourse, forgetting to use contraception, negative attitudes towards contraception and their partner's refusal to use contraception. The literature has ascribed these behaviours to an inadequate perception of pregnancy risk (i.e., adolescents did not equate the possibility of becoming pregnant with contraceptive failure or non-use of contraception (Jones, Darroch, & Henshaw, 2002), or to a lack of knowledge about alternative behaviours to address contraceptive failure (e.g., use of emergency contraception; Johnson, Nshom, Nye, & Cohall, 2010; Nunes, 2005).

Our findings are consistent with research showing that adolescents were involved in a romantic relationship with an older partner at the time of conception (Helström et al., 2006), and the majority were high school students. Studies have shown that when an adolescent has an older partner, it may increase the risk of being ineffective in preventing pregnancy (Araújo Pedrosa, 2009), because adolescents usually perceive less support regarding contraceptive use and experience more controlling behaviours from older partners than from partners of a similar age

(Wang & Chiou, 2008). Thus, to effectively negotiate pregnancy prevention with partners older than themselves, adolescents must be taught communication skills earlier in their development.

Finally, based on the adolescents' age, our results highlight the heterogeneity of the characteristics of those who had an abortion. Some of the differences may be expected on the basis of different developmental stages and increasing experience with age (Phipps et al., 2008), namely marital status, educational level, occupation, gynaecological age and number of sexual partners. However, other variables should be considered in interventions to prevent unplanned pregnancy (Phipps et al., 2008). Adolescents in the youngest age group reported earlier age at menarche and at first sexual intercourse and lower gynaecological age, characteristics that distinguish them from the other groups and that should not be ignored given younger adolescents' longer exposure to the potential risk of pregnancy (Araújo Pedrosa, 2009; Treffers, Olukoya, Ferguson, & Liljestrand, 2001; Valle, Torgersen, Røysamb, Klepp, & Thelle, 2005). On the other hand, they have less knowledge about sexual health (Leppälahti et al., 2012) and lower cognitive ability, which decreases their competence in contraceptive decision-making (Commendador, 2007) and explains the non-use or incorrect use of contraception (Wang & Chiou, 2008). Furthermore, the fact that adolescents under 16 years of age may require parental or legal guardian consent in the decision-making process may increase the complexity of this reproductive decision.

The 16- to 17-year-old age group may be considered as a transitional group between the younger and older age groups (Phipps et al., 2008). In comparison with the youngest group, although some of their characteristics reduce the potential risk of pregnancy, such as having a higher age at menarche, age at first sexual intercourse and gynaecological age, others increase it (e.g., the number of sexual partners). However, the remaining variables are similar to those of the under-16 age group.

The 18- to 19-year-old group more frequently reported being married or living with a partner and having a higher number of sexual partners: characteristics which have been related to a higher risk of ineffective pregnancy prevention (Coker, Richter, Valois, McKeown, & Garrison, 1994; Vikat, Rimpela, Kosunen, & Rimpela, 2002) and repeat abortion (Leppälahti et al., 2012). They reported a higher educational level, also of their partner, and more frequent intention of going to university, compared with the other groups. On the other hand, some had dropped out of school and did not want to continue their studies. These differences may be explained by the fact that some of these adolescents and their partners had more often finished mandatory education and/or had fulfilled their academic aspirations and wanted to begin work; some had left the parental home and were living with their partner.

Strengths and weaknesses of the study

Our results will enable the development of public health strategies for adolescent Portuguese women and provide useful indicators for international research, especially in relation to the differences in age groups of adolescents having an abortion. This is the first study in Portugal that has used a national approach to characterise the different life contexts of adolescents. Internationally, our findings help to clarify the scarce and sometimes inconsistent knowledge about the characteristics of the adolescent population having an abortion. The inclusion of variables such as age at menarche and at first sexual intercourse and the number of sexual partners are important contributions to the field, given that these variables have been neglected in previous research. Moreover, in contrast to previous studies, the present study also included an analysis of the characteristics of the adolescents' partners, which allowed us to understand the relational context. Our study is also the first to explore differences between the age groups of adolescents who had an abortion against the background of a wide range of sociodemographic, sexual, reproductive and relational characteristics. Knowledge about life contexts and different needs of adolescents who had an abortion according to their age may be useful in developing age-appropriate guidelines for interventions to prevent unplanned pregnancy and support adolescents' reproductive decisions.

There are some limitations to consider when analyzing our findings. First, although the size of the groups was consistent with national statistics, given the small size of the under-16 age group, the study only allowed us to detect of mainly medium to large effects. Second, due to the sensitive nature of some of the study variables assessed, such as age at first sexual intercourse, number of sexual partners and contraceptive use, it was difficult to control for socially desirable answers (Palen et al., 2008; Rose et al., 2009). Future research should therefore evaluate other sources of information (e.g., adolescents' partners) as a strategy to overcome the inconsistencies in the data. Furthermore, because the data were collected at multiple Portuguese health services, and several health care providers were involved in the sample collection, we could not obtain complete information on how many adolescents refused to participate. However, based on the discrepancy between the total number of our sample and the total number of abortions during the time period when the study was conducted (DGH, 2016), we infer that the refusal rate was high. Finally, owing to the absence of a comparison group of adolescents who decided to continue their pregnancy, we were not able to elucidate the specificities of these groups according to their reproductive decision.

## Differences in results and conclusions in relation to other studies

Our results suggest that, compared with the other groups, the decision to terminate a pregnancy in 18- to 19-year-olds may not be exclusively related to academic aspirations, because some reported dropping out of school and did not intend to continue their studies. However, it

seems possible to expect that unemployment and poor living conditions may be important variables to consider in the decision to terminate a pregnancy.

### Relevance of the findings: implications for clinicians and policy-makers

Our findings have important implications for clinical practice in the prevention of unplanned pregnancy and abortion. The results highlight that pregnancy may occur not only due to the non-use of contraception, but also to its inconsistent or incorrect use. The results reinforce the need to intervene in a differentiated manner according to the different requirements of each of these behaviours (Jones et al., 2002; Pires, 2014). Regarding adolescents who reported the use of contraception, it is important to understand their knowledge about contraception (Pires, 2014), how they use it (Dias, 2009; Health Behaviour in School-Aged Children, 2014), their difficulties in using it correctly, and the consequences of these behaviours (Jones et al., 2002; Tripp & Viner, 2005). Condoms were the most frequently used type of contraception, and they are dependent on user compliance and have a higher rate of contraceptive failure (Lim, Wong, Yong, & Singh, 2012). In this sense, the use of effective contraceptive methods (Silva et al., 2011), such as long-acting reversible contraception, which are not dependent on user compliance (Brown & Guthrie, 2010; Kost, Singh, Vaughan, Trussell, & Bankole, 2008) has been suggested as a safe and highly effective option to prevent unplanned pregnancy, including among adolescents (WHO, 2004a). Moreover, the risk of repeat abortion decreases if contraceptive use is started immediately after abortion (Heikinheimo, Gissler, & Suhonen, 2008). As regards adolescents who do not use contraception, it is important to inform them about the risk of unprotected sexual intercourse, demystify the negative side effects of contraception, clarify the benefits of contraception, promote negotiation skills about contraceptive use with their partner (Pires et al., 2014), and inform them how they can access contraception.

Finally, our study stresses that preventive interventions for abortion must be sensitive to the heterogeneity of the adolescents' characteristics and their life contexts. Specifically, our results highlight the need to develop early preventive interventions if there is a likelihood of early sexual intercourse, as this may represent a longer exposure to the potential risk of pregnancy (Araújo Pedrosa, 2009; Coley & Chase-Lansdale, 1998; Treffers et al., 2001; Valle et al., 2005). Regarding the characteristics of younger adolescents, school appears to be a preferential preventive context when both they and their partners are students. Since 2010, sexuality education has been a compulsory subject on Portuguese school curricula (AR, 2010). Considering our results, it is important to include accurate information about contraception, the importance of consistent contraceptive use (Bankole, Singh, & Haas, 1998; Larsson, Aneblom, Odling, & Tydén, 2002; Nunes, 2005) skills training to identify possible contraceptive failures (Pires et al., 2014), alternative strategies to address contraceptive failure (Kost et al., 2008) and the use of emergency contraception (Pires et al., 2014).

Community health care providers also have an important role in preventive interventions, particularly among older adolescents who have left school and are beyond the reach of school sexuality education programmes (WHO, 2004b). Family planning clinics play an important role in promoting the sexual and reproductive health of young people (WHO, 2004b). In the Portuguese national health system, consultations and access to contraception are provided free of charge. Moreover, routine primary health care, family medicine and/or paediatric consultations can also represent important opportunities for counselling about sexuality and contraception (Chernick, Kharbanda, Santelli, & Dayan, 2012; Nunes, 2005; Silva et al., 2012). Indeed, even after contraception is prescribed, adolescents may have difficulty understanding or applying the information given by a health care provider (WHO, 2004a). Therefore, contraceptive use and all related issues should be evaluated and discussed every time an adolescent interacts with a health care provider (WHO, 2004a; Zink, Shireman, Ho, & Buchaman, 2002).

The focus of intervention should not be exclusive to adolescents but should also include their partners, given that the majority in our study were involved in a romantic relationship. The difference in the age of partners ranged from - 2 to 27 years, indicating that some were adults. These findings highlight the need to rethink health policies in order to include the male population in preventive actions and promote safe sexuality in both the school and community context (Pires, 2014). Involving adolescents' partners in family planning consultations may also be useful in preventing unplanned pregnancy (Pires, 2014).

Promoting educational campaigns about sexuality in the mass media (Silva et al., 2011) and in social networks can be an important strategy to improve information about contraception and how to use it, thus promoting sexual and reproductive health among adolescents.

Our results stress the importance of continuing to invest in preventive school and/or community interventions, as well as interventions adapted to the needs of the adolescent population according to age (WHO, 2004b).

## Unanswered questions and future research

Further investigations are needed to clarify the most important reasons that lead to pregnancy termination according to age group and the influence of significant others in the decision-making process. Moreover, studies are required that explore which adolescent characteristics predict repeat abortion. Finally, further investigation should compare the characteristics of adolescents who, faced with a pregnancy, decide to have an abortion and those who continue their pregnancy.

## Conclusions



Our study provides a number of unique contributions to knowledge about the life contexts (sociodemographic, sexual, reproductive and relational characteristics) of Portuguese adolescents having an abortion. Our findings suggest that unplanned pregnancy may occur not only due to the non-use of contraception but also due to its inconsistent or incorrect use. Moreover, our findings highlight that interventions to prevent unplanned pregnancy should be sensitive to the heterogeneity of adolescents' life contexts and, depending on their age, prioritise different contexts of intervention, such as school and community. Finally, through medical appointments for the abortion procedure and post-abortion follow-up, health care providers have the opportunity to understand adolescents' knowledge about contraception, how they use it, their previous experiences and difficulties (Moreau, Trussell, Desfreres, & Bajos, 2010), as well as their relational context, and to promote informed contraceptive choices in the light of the adolescents' characteristics.

## References

- Alferes, V. (2002). *Inquéritos: Tamanho da amostra e intervalos de confiança* [Surveys: Sample size and confidence intervals] – *SPSS Syntax Files*. Retrieved from <http://goo.gl/tVbKzb>
- Araújo Pedrosa, A. (2009). *Gravidez e transição para a maternidade na adolescência: Determinantes individuais e psicossociais da ocorrência de gravidez e da adaptação. Estudo com adolescentes da Região Autónoma dos Açores* [Pregnancy and transition to motherhood during adolescence: individual and psychosocial determinants of pregnancy and adaptation – a study with adolescents from the Azores Islands]. (dissertation). University of Coimbra.
- Araújo Pedrosa, A., Canavarro, M. C., & Pereira, M. (2003). *Entrevista de avaliação clínica para as utentes da Unidade de Intervenção Psicológica da Maternidade Daniel de Matos, HUC* [Clinical assessment interview for patients of Unit of Psychological Intervention, Maternity Daniel de Matos, HUC]. Unpublished manuscript.
- Assembly of the Republic [AR]. (1978, november, 25). Ordinance n.º 496/77, 25 of november (1.<sup>st</sup> Serie). *Official Gazette, Serie I, 273*, 2818-(11). Retrieved from <http://goo.gl/PKkXDE>
- Assembly of the Republic [AR]. (2007, april, 17). Law n.º 16/2007, 17 of april (1.<sup>st</sup> Serie). *Official Gazette, Serie I, 75*, 2417-2418. Retrieved from <http://goo.gl/IKmRR6>
- Assembly of the Republic. (2010, april, 9). Ordinance n.º 196-A/2010, 9 of april (1.<sup>st</sup> Serie). *Official Gazette, Série I, 69*, 1170(2)-1170(4). Retrieved from <http://goo.gl/am8fE7>
- Bankole, A., Singh, S., & Haas, T. (1998). Reasons why women have induced abortions: Evidence from 27 countries. *International Perspectives on Sexual and Reproductive Health, 24*, 117-127. doi:10.2307/3038208
- Brauner-Otto, S. R., & Axinn, W. G. (2010). Parental family experiences, the timing of first sex, and contraception. *Social Science Research, 39*, 875-893. doi:10.1016/j.ssresearch.2010.06.015

- Brown, S., & Guthrie, K. (2010). Why don't teenagers use contraception? A qualitative interview study. *The European Journal of Contraception & Reproductive Health Care*, *15*, 197-204. doi:10.3109/13625181003763456
- Chernick, L., Kharbanda, E. O., Santelli, J., & Dayan, P. (2012) Identifying adolescent females at high risk of pregnancy in a pediatric emergency department. *Journal of Adolescent Health*, *51*, 171-178. doi:10.1016/j.jadohealth.2011.11.023
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-166. doi:10.1037/0033-2909.112.1.155
- Coker, A. L., Richter, D. L., Valois, R. F., McKeown, R. E., & Garrison, C. Z. (1994). Correlates and consequences of early initiation of sexual intercourse. *Journal of School Health*, *64*, 372-377. doi:10.1111/j.1746-1561.1994.tb06208.x
- Coley, R. L., & Chase-Lansdale, P. L. L. (1998). Adolescent pregnancy and parenthood: Recent evidence and future directions. *American Psychologist*, *53*, 152-166. doi:10.1037/0003-066X.53.2.152
- Commendador, K. A. (2007). The relationship between female adolescent self-esteem, decision making, and contraceptive behavior. *Journal of the American Academy of Nurse Practitioners*, *19*, 614-623. doi:10.1111/j.1745-7599.2007.00267.x
- Davies, S. L., DiClemente, R. J., Wingood, G. M., Person, S. D., Dix, E. S., Harrington, K., ...Oh, K. (2006). Predictors of inconsistent contraceptive use among adolescent girls: Findings from a prospective study. *Journal of Adolescent Health*, *39*, 43-49. doi:10.1016/j.jadohealth.2005.10.011
- Dias, S. (2009). *Comportamentos sexuais nos adolescentes: Promoção da saúde sexual e prevenção do VIH/Sida* [Sexual behaviour in adolescents: Promotion of sexual health and HIV]. Lisbon: Calouste Gulbenkian Foundation & Foundation for Science and Technology.
- Directorate-General of Health [DGH]. (2012). *Relatório dos registos das interrupções da gravidez ao abrigo da lei 16/2007, de 17 de abril: Dados referentes ao período de janeiro a dezembro de 2011* [Report of induced abortion under the Law 16/2007 of 17 April: Data for January to December 2011]. Lisbon: Author Edition. Retrieved from [http:// goo.gl/NuEtEg](http://goo.gl/NuEtEg)
- Directorate-General of Health [DGH]. (2016). *Relatório dos registos das interrupções da gravidez: Dados de 2015* [Report of induced abortion: data for 2015]. Lisbon: Author Edition. Retrieved from <https://goo.gl/EsbHgn>
- Evans, A. (2001). *Motherhood or abortion: Pregnancy resolution decisions of Australian teenagers*. (dissertation). National University of Australia.
- Felton, G. M., Parsons, M. A., & Hassell, J. S. (1998). Health behaviour and related factors in adolescents with a history of abortion and never-pregnant adolescents. *Health Care for Women International*, *19*, 37-47. doi:10.1080/073993398246566
- Field, A. (2009). *Discovering statistics using SPSS* (3<sup>nd</sup> ed.). London: Sage Publications.

- Health Behaviour in School-Aged Children [HBSC] (2014). *Portuguese adolescents' health in times of recession - The national data of the Study of Health Behaviour in school-aged children (HBSC) of 2014*. Retrieved from <https://goo.gl/YPeoiD>
- Heikinheimo, O., Gissler, M., & Suhonen, S. (2008). Age, parity, history of abortion and contraceptive choices affect the risk of repeat abortion. *Contraception, 78*, 149-154. doi:10.1016/j.contraception.2008.03.013
- Helström, L., Zätterström, C., & Odling, V. (2006). Abortion rate and contraceptive practices in immigrant and Swedish adolescents. *Journal of Pediatric and Adolescent Gynecology, 19*, 209-213. doi:10.1016/j.jpag.2006.02.007
- Johnson, R., Nshom, M., Nye, A. M., & Cohall, A. T. (2010). There's always plan B: Adolescent knowledge, attitudes and intention to use emergency contraception. *Contraception, 81*, 128-132. doi:10.1016/j.contraception.2009.08.005
- Jones, R. K., Darroch, J. E., & Henshaw, S. K. (2002). Contraceptive use among U.S. women having abortions in 2000-2001. *Perspective on Sexual and Reproductive Health, 34*, 294-303. doi:10.1363/3429402
- Kost, K., Singh, S., Vaughan, B., Trussell, J., & Bankole, A. (2008). Estimates of contraceptive failure from the 2002 National Survey of Family Growth. *Contraception, 77*, 10-21. doi:10.1016/j.contraception.2007.09.013
- Larsson, M., Aneblom, G., Odling, V., & Tydén, T. (2002). Reasons for pregnancy termination, contraceptive habits and contraceptive failure among Swedish women requesting an early pregnancy termination. *Acta Obstetrica et Gynecologica Scandinavica, 81*, 64-71. doi:10.1046/j.0001-6349.2001.00169.x
- Leppälahti, S., Gissler, M., Mentula, M., & Heikinheimo, O. (2012). Trends in teenager termination of pregnancy and its risk factors: A population-based study in Finland, 1987-2009. *Human Reproduction, 27*, 2829-2836. doi:10.1093/humrep/des253
- Lim, L., Wong, H., Yong, E., & Singh, K. (2012). Profiles of women presenting for abortions in Singapore: Focus on teenage abortions and late abortions. *European Journal of Obstetrics & Gynecology and Reproductive Biology, 160*, 219-222. doi:10.1016/j.ejogrb.2011.11.017
- Mavroforou, A., Koumantakis, E., & Michalodimitrakis, E. (2004). Adolescence and abortion in Greece: Women's profile and perceptions. *Journal of Pediatric & Adolescent Gynecology, 17*, 321-326. doi:10.1016/j.jpag.2004.06.007
- Moreau, C., Trussell, J., & Bajos, N. (2012). Contraceptive paths of adolescent women undergoing an abortion in France. *Journal of Adolescent Health, 50*, 389-394. doi:10.1016/j.jadohealth.2011.07.013
- Moreau, C., Trussell, T., Desfreres, J., & Bajos, N. (2010). Patterns of contraceptive use before and after an abortion: Results from a nationally representative survey of women undergoing an abortion in France. *Contraception, 82*, 337-344. doi:10.1016/j.contraception.2010.03.011
- National Institute of Statistics. (2009). *Tipologia de áreas urbanas (TIPAU)* [Urban area typology]. Lisbon: Author Edition. Retrieved from <http://goo.gl/mdsOJG>

- Nunes, M. T. (2005). Conhecimento e utilização da contraceção de emergência em alunas do ensino secundário em Guimarães [Knowledge and use of emergency contraception in secondary school students in Guimarães]. *Revista Portuguesa de Clínica Geral*, 21, 247-256. Retrieved from <http://goo.gl/G4WYaV>
- Palen, L. A., Smith, E., Caldwell, L. L., Flisher, A. J., Wegner, L., & Vergnani, T. (2008). Inconsistent reports of sexual intercourse among South African high school students. *Journal of Adolescent Health*, 42, 221-227. doi:10.1016/j.jadohealth.2007.08.024
- Phipps, M. G., Rosengard, C., Weitzen, S., Meers, A., & Billinkoff Z. (2008). Age group differences among pregnant adolescents: Sexual behavior, health habits and contraceptive use. *Journal of Pediatric & Adolescent Gynecology*, 21, 9-15. doi:10.1016/j.jpag.2007.07.009
- Phipps, M. G., & Sowers, M. (2002). Defining early adolescent childbearing. *American Journal of Public Health*, 92, 125-128. doi:10.2105/AJPH.92.1.125
- Pires, R. (2014). *Percursos conducentes à maternidade adolescente em Portugal* [Pathways leading to teenager motherhood in Portugal]. (dissertation). University of Coimbra.
- Pires, R., Pereira, J., Araújo Pedrosa, A., Bombas, T., Vilar, D., Vicente, L., & Canavarro, M. C. (2014). Trajetórias relacionais e reprodutivas conducentes à gravidez na adolescência: A realidade nacional e regional portuguesa [Relational and reproductive pathways leading to teenager pregnancy: The Portuguese national and regional reality]. *Acta Médica Portuguesa*, 27, 543-555. Retrieved from <http://goo.gl/g24oto>
- PORDATA (2013). *Nados-vivos de mães residentes em Portugal: total e por grupo etário da mãe – Municípios* [Live births of mothers living in Portugal: Total and per age group of mother - Municipalities]. Lisbon: Fundação Francisco Manuel dos Santos. Retrieved from <http://goo.gl/riOGEg>
- Rose, E., DiClemente, R. J., Wingood, G. M., Sales, J. M., Latham, T. P., Crosby, R. A., ... Hardin, J. (2009). The validity of teens' and young adults' self-reported condom use. *Archives of Pediatric and Adolescent Medicine*, 163, 61-64. doi:10.1001/archpediatrics.2008.509
- Sihvo, S., Bajos, N., Ducot, B., & Kaminski, M. (2003). Women's life cycle and abortion decision in unintended pregnancies. *Journal of Epidemiology and Community Health*, 57, 601-605. doi:10.1136/jech.57.8.601
- Silva, H. M., Ferreira, S., Águeda, S., Almeida, A. F., Lopes, A., & Pinto, F. (2012). Sexualidade e risco de gravidez na adolescência: Desafios de uma nova realidade pediátrica [Sexuality and risk of pregnancy in adolescence: Challenges of a new pediatric reality]. *Acta Pediátrica Portuguesa*, 43, 8-15. Retrieved from <http://goo.gl/4tzDs9>
- Silva, M. O. da, Jahn, A., Olsen, J., Karro, H., Temmerman, M., Gissler, M., ... Hannaford, P. (2011). The reproductive health report: The state of sexual and reproductive health within the European Union. *The European Journal of Contraception & Reproductive Health Care*, 16, S1-S70. doi:10.3109/13625187.2011.607690

- Simões, M. R. (1994). *Investigações no âmbito da aferição nacional do teste das Matrizes Progressivas de Raven* [Raven's Progressive Matrices: Aferition studies]. (dissertation). University of Coimbra.
- Singh, K., Fong, Y. F., & Loh, S. Y. (2002). Profile of women presenting for abortions in Singapore at the national university hospital. *Contraception*, *66*, 41-46. doi:10.1016/j.ejogrb.2011.11.017
- Treffers, P. E., Olukoya, A. A., Ferguson, B. J., & Liljestrand, J. (2001). Care for adolescent pregnancy and childbirth. *International Journal of Gynecology & Obstetrics*, *75*, 111-121. doi:10.1016/S0020-7292(01)00368-X
- Tripp, J., & Viner, R. (2005). Sexual health, contraception, and teenage pregnancy. *BMJ*, *330*, 590-593. doi:10.1136/bmj.330.7491.590
- Valle, A. K., Torgersen, L., Røysamb, E., Klepp, K. I., & Thelle, D. S. (2005). Social class, gender and psychosocial predictors for early sexual debut among 16 year olds in Oslo. *European Journal of Public Health*, *15*, 185-194. doi:10.1093/eurpub/cki121
- Vikat, A., Rimpela, A., Kosunen, E., & Rimpela, M. (2002). Sociodemographic differences in the occurrence of teenage pregnancies in Finland in 1987-1998: A follow up study. *Journal of Epidemiology and Community Health*, *56*, 659-668. doi:10.1136/jech.56.9.659
- Wang, R. H., & Chiou, C. J. (2008). Relative contribution of intrapersonal and partner factors to contraceptive behaviour among Taiwanese female adolescents. *Journal of Nursing Scholarship*, *40*, 131-136. doi:10.1111/j.1547-5069.2008.00217.x
- World Health Organization. (1975). *Pregnancy and abortion in adolescence: Technical Report Series n°583*. Geneva: Author Edition. Retrieved from <http://goo.gl/LAFJUm>
- World Health Organization. (2004a). *Medical eligibility criteria for contraceptive use, 3<sup>rd</sup> edition*. Geneva: Author Edition. Retrieved from <http://goo.gl/IJ5D6q>
- World Health Organization. (2004b) *Contraception: issues in adolescent health and development*. Geneva: Author Edition. Retrieved from <http://goo.gl/R4nHVS>
- World Health Organization. (2006) *Defining sexual health. Report of a technical consultation on sexual health 28-31 January 2002*. Geneva: Author Edition. Retrieved from <http://goo.gl/Bxfj41>
- Zink, T. M., Shireman, T. I., Ho, M., & Buchanan, T. (2002). High-risk teen compliance with prescription contraception: An analysis of Ohio Medicaid claims. *Journal of Pediatric & Adolescent Gynecology*, *15*, 15-21. doi:10.1016/S1083-3188(01)00134-6