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## FACTORS RELATED TO SUBSEQUENT ADOLESCENT PREGNANCY IN THE DOMINICAN REPUBLIC

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### Cover Page Footnote

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### Abstract

**Objectives:** Adolescents with subsequent pregnancies in the Dominican Republic represent a significant but poorly understood population with little available data to inform health care services. The objective of this exploratory study was to characterize this important cohort.

**Methods:** A survey of demographic items and a sexual and obstetrical history was administered to 50 adolescents with subsequent pregnancies in La Romana, Dominican Republic. **Results:**

Most participants were married (78%) and exclusively economically dependent on their partner (72%) and nearly half (48%) stopped attending school. Twelve percent reported having intended their current pregnancy. **Conclusions:** Adolescents with subsequent pregnancies were dependent on partners in the form of living conditions and marriage, economic dependence and unemployment, and lack of education.

Adolescent pregnancy rates have declined worldwide in recent decades, but rates in Latin America have declined less rapidly than the rest of the world (Centro de Estudios Sociales y Demográficos [CESDEM], 2014). The Dominican Republic, Nicaragua, and Guatemala have the highest rates of adolescent pregnancy in Latin America with more than 100 births per 1,000 girls aged 15 to 19 years (World Bank, 2012). In the Dominican Republic, one in five girls aged 15 to 19 has been pregnant and 34% of girls has experienced pregnancy before 19 years of age (CESDEM, 2014).

In the United States, the National Survey of Family Growth from 2006-2010 showed that 23% of pregnancies were intended for those aged 15-19 years old (Mosher, Jones, & Abma, 2012). Another study showed that one in seven sexually active adolescents aged 15-19 in the United States had a positive pregnancy attitude (Lau, Lin, & Flores, 2014). Pregnancy in this population may present unique health risks, which are particularly important to recognize if pregnancy or parenthood is not a desired at that time. While unintendedness is not by definition negative and there are some girls who have positive associations with their pregnancy, for many, pregnancy presents serious social and health consequences.

There is ample evidence that early motherhood comes with health risks and socio-economic disadvantages. In fact, complications during pregnancy and childbirth are the second leading cause of death for girls aged 15 to 19 worldwide (World Health Organization [WHO], 2015). Teenage mothers experience higher rates of pre-eclampsia, eclampsia, endometritis, and systemic infections than their older counterparts (Ganchimeg et al., 2014). Newborns of adolescent mothers are more likely to be born prematurely, have low birth weight, and experience severe neonatal conditions and death (Ganchimeg et al., 2014). Beyond the health of the mother and child, in the Dominican Republic, 20% of girls aged 15 to 19 stopped attending

school after becoming pregnant, which may limit their financial stability, career goals, and participation in social life (CESDEM, 2014).

Despite a well-established body of literature on adolescent pregnancy, there is a relative dearth of knowledge on adolescent multigravida. On review of the literature, no published data on subsequent pregnancies in adolescents in the Dominican Republic were found. In the United States, one in every five (17%) births by teenage mothers represents a subsequent pregnancy (American College of Obstetricians and Gynecologists [ACOG], 2017). There is considerable variation in the rate of subsequent births based on ethnicity (14.8 to 21.6%) and state (10 to 22%) (Gavin et al., 2013). These births are associated with a greater risk of prematurity and low birth weight and limit the adolescent's ability to pursue educational or career opportunities (Klerman, 2004; Martin et al., 2012; Pinzon & Jones, 2012). Available data suggest that additional adolescent births compound the socioeconomic hardships of adolescent pregnancy (Pinzon & Jones, 2012).

Information on the circumstances associated with subsequent adolescent pregnancies and measures for improved support and health services for young mothers in the Dominican Republic are critically needed. The objectives of this study were as follows: (a) to collect demographic information on adolescents with multiple pregnancies, (b) to gather a sexual and reproductive history, and (c) to explore the knowledge and attitudes of multiparous adolescents regarding motherhood, supportive relationships, and advice for their peers.

## **Methods**

### **Study Setting**

This was a mixed methods study that integrated both quantitative, cross-sectional survey data with qualitative information from interviews. The study took place between August 2016

and June 2017 at an adolescent clinic in La Romana, Dominican Republic. This clinic is affiliated with both the local public hospital and with a non-governmental organization specializing in services for vulnerable populations, including people with HIV, sex workers, and men who have sex with men. At the adolescent clinic, services are provided to adolescents aged 10 to 19 years who live in the southeastern region of the Dominican Republic. Services included prenatal care, family planning, HIV and pregnancy testing, gynecological services, pediatric services for infants of adolescents, health services for young men, and counseling services. The clinic also has a comprehensive sexual and reproductive health education program that reaches approximately 3,000 in- and out-of-school youth each year.

### **Participants**

Inclusion criteria were pregnant girls, aged 15 to 19, Spanish-speaking, with at least one prior pregnancy. No specific prior pregnancy outcomes were required. The goal of 50 participants was set because thematic saturation was anticipated by that point.

### **Study Procedures**

Prior to the study beginning, ethical approval was obtained from two institutional review boards in the Dominican Republic. Participants were recruited consecutively to participate in the study from the waiting room of the clinic. Eligible and interested participants were escorted to a private room, where a research team member explained the study in detail, read the project description, and obtained informed consent following the American College of Obstetricians and Gynecologists guidelines for adolescent health research (ACOG, 2016). If the adolescent agreed to participate, a member of the research team administered the survey with an interview guide.

Due to a wide range of literacy abilities among participants, the questions were read out loud by a member of the study team and the participants' direct answers were recorded by the

same member of the study team. For instance, if a participant was asked, “if you used family planning, did you experience a side effect? Yes or no?” and the participant stated, “Yes, I experienced abdominal cramps” in response, only the direct answer of “Yes” would be recorded and the rest of the answer was not transcribed (except for questions with qualitative responses as described in the next paragraph). However, all interviews were also audio recorded for improved accuracy of data analysis. The interview audio recordings were reviewed by a second team member to confirm responses that had been marked by the team member during the live interview. In order to maintain consistency, only the questions of the interview script were asked and no additional follow up or probing questions were asked. Clarifications to questions were provided as needed. If a participant did not provide an answer relevant to the question, then no answer for that question was recorded and the interview proceeded to the next question in the script.

There were four sections to the survey: demographic data, adolescent sexual health, reproductive health history, and emotional well-being and sentiments on the current pregnancy. Survey items were designed by senior staff (LM, MH) and volunteers at the adolescent clinic with extensive experience working with this population. Topic areas included: contraceptive myths in the adolescent sexual health section (2 questions), contraceptive complications in the reproductive health history section (4 questions), and adolescent motherhood in the emotional well-being and sentiments section (3 questions). An example of one section of the interview script can be seen translated below in Figure 1. For qualitative responses, the entire answer was transcribed verbatim, confirmed by audio recording, and marked [Qualitative] as seen in Figure 1 and in the Results section.

### Figure 1. Emotional Well-Being and Sentiments on Current Pregnancy

1. How do you feel now? [Qualitative]
2. Are you content being a mother? Yes or no?
3. Are you content being pregnant again? Yes or no?
4. Has your partner accepted your pregnancy? Yes or no?
5. Have your parents or guardians accepted your pregnancy? Yes or no?
6. Have you ever experienced physical or verbal violence from your current partner? Yes or no?
7. Have you experienced physical or verbal violence from any prior partners? Yes or no?
8. Have you ever experienced physical or verbal violence from your family? Yes or no?
9. What advice would you like to give to other adolescent mothers? [Qualitative]
10. How do you think an adolescent feels when she discovers she may be or is pregnant?  
[Qualitative]

Participants who reported experiencing violence were provided additional resources by the clinic team. While healthcare providers are morally obligated to provide support to adolescents experiencing intimate partner violence (IPV), they are not mandated reporters in the Dominican Republic (Ministerio de Salud Pública, 2017).

Interviews lasted approximately 50-70 minutes. Each completed survey was labeled with a selected number for future reference ease while also de-identifying the interview response sheet and recording device. At the end of the interview, the research team member obtained the participant's patient number and recorded it on a separate document in order to ensure that there was no duplication of participants in the study. This paperwork was stored in a locked cabinet of a private office.

## **Data Analysis**

Analysis occurred after data collection was complete. Descriptive statistics of quantitative data were calculated using Stata 14.2 software (StataCorp, 2017). Responses were individually analyzed; no composite scores were generated. Qualitative data were assessed with conventional content analysis approach: the study team did not use pre-determined codes in assessing qualitative data, given the limited literature on this subject, to allow for novel themes to be demonstrated on assessment of the data (Hsieh, 2005). Codes were iteratively derived from analysis of the data based on emerging themes. The transcripts were coded by one study team member (CF) and, to ensure consistency, another study team member (LM) coded a subset of just over half (28) of the surveys. A third team member was available if no consensus was reached.

## **Results**

### **Demographic Characteristics**

The 50 participants in this study were between 15 and 19 years old and were pregnant for either the second or third time. Of participants, 88% had a Dominican birth certificate allowing them to get an identification card for employment and 76% had a Dominican identification card. Sixty-two percent of the participants lived with their partner. Most participants (78%) were married and 72% relied exclusively on their partner (or father of prior child or current pregnancy if participant reported being single) economically. Sixteen percent of the participants were employed, and 48% had stopped attending school without graduating. Of the participants still attending school (44%), 82% were at least one grade behind. Additional demographic characteristics are represented in Table 1.

**Table 1. Demographic characteristics of participants (n=50)**

<b>Characteristic</b>	<b>N (%) or mean (range)</b>
Current Residence	
La Romana, Dominican Republic	45 (90%)
Batey, Dominican Republic (rural community where sugarcane plantation workers live)	2 (4%)
Other, Dominican Republic	3 (6%)
Lives with	
Partner	31 (62%)
Family	13 (26%)
Partner and family	1 (2%)
Alone	5 (10%)
Duration of current relationship (n=38)	
1 year or less	12 (32%)
2-3 years	16 (42%)
More than 3 years	10 (26%)
Difference in partner's age, if known (years older, n=37)	6 (-1-23)
Grade stopped attending school (n=23)*	8 (5-12)

\* One participant never attended school

### **Sexual and Reproductive History**

The average age of first intercourse was 15 years of age, with a range between 10 and 18 years of age. Of the 105 pregnancies among the 50 participants, there were six abortions and miscarriages and one child died after birth. In the participant's most recent birth, 61% percent

had a vaginal birth and 39% had a caesarean delivery. After the participant's most recent birth, miscarriage, or abortion, 80% used a family planning method. Eighty-eight percent of the participants reported that they did not plan their current pregnancy. Eighty-six percent of the participants had received at least one sexual education talk. Nearly half (42.5%) were familiar with at least four different family planning methods. Sixty-eight percent mentioned having heard what they identified as misconceptions about contraceptive methods, also known as "myths." Of the 43 unique "myths" described by participants, 40% involved combined oral contraceptives (COCs), 26% involved depot medroxyprogesterone acetate (DMPA), 16% involved intrauterine devices (IUD), 9% involved condoms, and 9% involved contraceptive implants. Of note, the analysis showed the most common myth involving COCs was that they provided no contraceptive benefit. Ninety-six percent of participants planned on using a family planning method after the delivery of their current pregnancy. Most participants (27%) intended to use DMPA, followed by the contraceptive implant and the copper IUD at 23% and 21%, respectively. Additional sexual and reproductive history are represented in Table 2.

**Table 2. Sexual and reproductive history of participants (n=50)**

Characteristic	N (%) or mean (range)
Number of pregnancies, including current pregnancy	
Two	45 (90%)
Three	5 (10%)
Age of youngest child (n=43)	
1 year old	12 (28%)
2 years old	19 (44%)
3 years old	12 (28%)

**Table 2 (continued)**

Family planning method utilized prior to current pregnancy (n=40)	
Depot medroxyprogesterone acetate (DMPA)	20 (50%)
Combined oral contraceptives (COCs)	14 (35%)
Contraceptive implant	1 (2.5%)
Adolescent's response to what led to current pregnancy, if not intended (n=44)	
Did not use a family planning method	6 (14%)
Imperfect use of family planning method	28 (63%)
Family planning method failure	10 (23%)
If used family planning, experienced side effects (n=40)	
Yes	24 (60%)
No	16 (40%)
If used family planning, health care provider had explained possible side effects (n=40)	
Yes	25 (62.5%)
No	15 (37.5%)

### Knowledge and Attitude Characteristics

In response to how the participant thinks an adolescent feels when she discovers she may be or is pregnant, 50 responses were taken: 42% of participants believe that the adolescent feels scared (or equivalent), 30% believe that they feel content (or equivalent), 12% believe that they feel sad (or equivalent), and 16% reported some other or combined emotion [Qualitative Analysis]. Of participants, 51% of the 43 participants who would give advice to other adolescent mothers suggested in some form that other adolescent mothers delay having another pregnancy, while 49% offered a wide variety of other advice [Qualitative Analysis]. Despite a range of reported emotions when describing other adolescents, 80% reported a content or positive

emotional state for themselves in the moment [Qualitative Analysis]. Ninety-four percent of participants reported being content to be a mother, and 84% of participants reported being content to be pregnant again. A minority stated their parents or guardians (20%) and partners (16%) did not support the current pregnancy. Thirty-six percent of participants reported experiencing physical or verbal violence by any of their partners (current or prior). Of those exclusively dependent on their partner, 36% were experiencing physical or verbal violence from their current partner or father of their most recent child. Twenty percent of participants reported experiencing physical or verbal violence by parents or guardians.

### **Discussion**

This study assessed the factors related to subsequent adolescent pregnancy in the Dominican Republic. In this convenience sample, while most participants were content with their current pregnancies, few had intended to become pregnant again. This represents a potential area for improvement in family planning services should girls desire alternative reproductive outcomes as well as representing an important area for additional support to facilitate meeting educational and social goals for girls who desire additional pregnancies.

### **Contraceptive use**

All but one of the participants utilizing contraception had used DMPA or COCs in between their two pregnancies. The participants who reported method failure represent a higher rate than expected based on use data for contraceptive methods (Guttmacher Institute, 2017). These instead may represent imperfect contraceptive use—or other unmeasured clinical phenomenon such as birth control sabotage—rather than contraceptive failure. Given the high rate of reported and presumed contraceptive failures from typical use of user-dependent methods in this study, education and availability of more methods that may better suit each individual,

including long acting reversible contraceptives (LARC), may offer significant benefits to this cohort. These illustrate critical points of intervention for this population.

Correct use of contraceptive methods may be complicated by incorrect or incomplete information, dissatisfaction and side effects of a method, and user-fatigue. In this study, the majority of participants reported what they recognized as family planning myths, most involving the two most utilized methods of DMPA and COCs. Myths regarding LARC methods were less common among this cohort, which may be the result of limited experience or good performance among those who used these methods in the community. One-half of participants intend to use LARC methods, despite the fact that none had any prior use of IUDs and only one with prior use of the implant. This shift parallels global efforts to improve the reliability and accessibility of contraceptive methods utilized by adolescents (Joshi, Khadilkar, & Patel, 2015; ACOG, 2012; ACOG, 2017). Use of an IUD or implant immediately postpartum or after abortion is suggested for adolescents by professional associations, if desirable to the recipient (ACOG, 2012). In other studies, adolescents who received postpartum contraceptive counseling were more likely to utilize implants over IUDs (ACOG, 2012). Thus, data show that, globally, adolescent girls are receptive to and benefit from the use of LARC methods in the effort to prevent subsequent pregnancies that affect 19% of adolescent mothers within one year of giving birth and 38% of adolescent mothers within two years of giving birth (Pinzon & Jones, 2012). While providers must be cautious to avoid coercive practices in their contraceptive counseling, improving access to a diverse array of contraceptive options increases the likelihood that those who desire pregnancy prevention find and continue a method satisfactory to them.

### **Dependence on the adolescent's partner**

While there are many complex factors associated with subsequent adolescent pregnancies in the Dominican Republic, a dominant theme in this study was dependence on the adolescent's partner. These data demonstrated dependence through living conditions and marriage, economic dependence and unemployment, and lack of education. These factors parallel those found in subsequent adolescent pregnancy in the United States (Pinzon & Jones, 2012). It is worth noting that for some of these young mothers, dependence may actually be reflecting much-needed support from their partners at a vulnerable time in the mothers' lives. While there is not anything inherently wrong with support itself, appreciating the broader context of this cohort's dependence is important, especially when this context involves the individual's exposure to violence and concerns for safety.

There are a number of negative consequences of teenage cohabitation and marriage, many of which are mediated through higher rates of early parenthood (Manning & Cohen, 2015). Globally over the past 15 years, the poorest adolescents have experienced higher pregnancy rates, and the World Health Organization lists early marriage as a key determinant of adolescent pregnancy (WHO, 2011). Most participants in this study were married and living with their partner, representing over double the nationally reported prevalence of adolescent marriage. A United Nations International Children's Emergency Fund report found that approximately 45% of women aged 20 to 24 in the Dominican Republic who married before age 15 had at least three children but only around 5% of women aged 20 to 24 in the Dominican Republic who married at age 18 or older had at least three children (United Nations Children's Fund, 2014). Further, child marriage (marriage when younger than 18 years old) is associated with limited maternal health care utilization and increased risk of IPV and suicide, highlighting that early relationships and reproductive outcomes can affect girls' and women's fundamental metrics of safety and well-

being (Godha, Gage, Hotchkiss, & Cappa, 2016; Abramsky et al., 2011; Svanemyr, Chandra-Mouli, Raj, Travers, & Sundaram, 2015), Social expectations play a role in girls' and young women's attitudes towards both marriage and pregnancy (WHO, 2012). Despite sociocultural pressure, the Dominican government recognizes marriage among minors as a problem: recent effort has been made to prevent any exceptions to marriage under 18 years of age (Acento, 2017). As of June 2020, no new laws or changes to prior laws have been put into effect.

Lack of financial security plays a critical role in the dependence on the adolescent's partner. One possible reason why 80% of participants in this study were dependent on their partner was lack of independent income. A small number of participants did not have a Dominican birth certificate or did not have a Dominican identification card, which is necessary for official employment. Thus, while 76% of the participants could theoretically apply for employment, only 16% were employed. This reduced rate of employment may be related to increased demand for household responsibilities and childcare as well as poor work credentials due to limited education. In contrast, almost all partners were reported to be working, creating and reinforcing a gendered power differential in financial independence and access to economic resources.

Although national data show that 20% of girls aged 15 to 19 stopped attending school after becoming pregnant, 48% of the participants in this study were not attending school (CESDEM, 2014). This suggests that multiple pregnancies increase the likelihood of discontinued education. Furthermore, of those attending school, 82% were at least one grade behind, highlighting the difficulty of completing education even among those enrolled. Limited education may jeopardize financial stability, career goals, and a healthy social life (CESDEM,

2014). All of these factors likely contribute to the continued dependence on the participant's partner.

For some participants, dependence and partner violence overlapped with over one third of those exclusively dependent on their partner experiencing violence. Survivors were not only economically trapped, but also affected by violence in their partners' attempts to assert power and control (Domestic Abuse Intervention Programs, 2017). Economic abuse, wherein the abusive partner has control over access to economic resources, makes it more difficult, and even dangerous, for survivors to leave the relationship (Adams, Sullivan, Bybee, & Greeson, 2008). In this study, over one third of adolescents reported physical or verbal violence from their partner or prior partners. IPV is negatively associated with job stability and economic well-being (Adams, Tolman, Bybee, Sullivan, & Kennedy, 2012). IPV may be higher during these adolescents' pregnancies as pregnant adolescents experience higher rates of violence from partners than non-pregnant adolescents (Pinzon & Jones, 2012). Identification of violence allows for safety planning and other critical interventions to support this vulnerable group.

### **Future improvements**

These data inform initial steps towards improvement in adolescent family planning care, which may be generalized to other clinics serving adolescents with multiple pregnancies, particularly within other resource-limited settings. Based on these results, discussion of the right contraceptive fit beyond DMPA and COCs, review of the risks and benefits of different contraceptives, as well as optimization of parenthood among those who desire to become or continue pregnancies should be prioritized in patient visits or during educational talks. These represent areas of care where family planning staff may have a significant impact on reproductive outcomes – and beyond – of the adolescents they serve. The level of economic

dependence on partners revealed in this study should also be considered in the counseling services offered to this patient population. Discussions ideally address topics such as marriage and cohabitation, economic dependence and employment, and education, with an emphasis on increasing the agency these young mothers have in their own lives (Hornberger & Committee on Adolescence, 2017).

Knowledge of, and access to, family planning methods is not sufficient for reducing the rate of subsequent adolescent pregnancy. Programs that also provide adolescents with help returning to school and with psychosocial support have been effective in reducing the rate of early subsequent pregnancies (Pinzon & Jones, 2012). The World Health Organization provides six critical guidelines for low- and middle-income countries which focus on preventing early marriage and preventing early pregnancy through a variety of measures that include additional educational opportunities and increased economic and social support (Chandra-Mouli, Camacho, & Michaud, 2013). Beyond the purview of medical care, there also needs to be political and cultural changes for contributing factors to adolescent pregnancies. Examples include outlawing child marriage, shifting expectations for girls' professional careers, and investing in girls' safety against sexual violence and IPV (WHO, 2011).

### **Limitations**

While this exploratory study adds novel information to literature on adolescent health, it is not without limitations. This study had a small sample size, but interviews demonstrated thematic saturation at their conclusions, decreasing the likelihood of overlooked, important factors contributing to the phenomenon of subsequent adolescent pregnancies. In addition, survey questions were developed by on site clinical experts and modified after a pilot test, but were not validated, limiting psychometric reliability. Another limitation of the study design was

that all answers were self-reported by the adolescents; thus, social desirability bias may have impacted the data collected. This may account for the discrepancy in participants' self-reported emotional state and their estimation of other adolescent mothers. It is important to note, however, many adolescents likely are content, despite this discrepancy. Pregnancy planning and intendedness are distinct metrics from contentment with pregnancy and parenthood. This discrepancy may also serve to highlight a cultural narrative wherein adolescent pregnancy may be stigmatized, but individuals have found satisfaction in the realities of their own lives. Future studies on contraceptive uptake after educational discussions, contraceptive continuation and satisfaction rates, and the cost-benefit analysis of LARC among this population, specifically in resource limited settings, are greatly needed. Data on partners' attitudes towards contraception as well as prospective studies on participants' job security and educational attainment in the future are also important aspects of improving health care for adolescent mothers.

### **Conclusions**

The lack of knowledge surrounding the reasons for, and factors associated with, subsequent adolescent pregnancy represents a knowledge gap in the medical community, including in the Dominican Republic. The vast majority of participants reported unintended, subsequent pregnancy; they also described health services and contraceptive methods that did not fit their needs. Further, dependence on the adolescent's partner was a common theme, which can be addressed through educational and interventional sessions in the clinic. While the etiology of adolescent pregnancy is multifactorial, the medical community can offer impactful, tailored family planning care to support girls' agency over their reproductive futures and beyond.

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