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Partner influence on oral contraceptive discontinuation

by

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Partner influence on oral contraceptive discontinuation: literature review

I. Introduction

Family planning, practiced by women and their partners throughout the world, is both a practice and a challenge for women of all racial, social and economic distinctions. Hardly a modern concept, the practice of contraception entails more than the immediate goal of postponing or preventing pregnancy. Cultural beliefs and individual values, religious tenets and secular trends, psychological variables and relationship characteristics all influence the implementation and continuation of family planning methods.

Oral contraceptives (OCs), one of the most effective means of contraception, have been utilized by scores of women for forty years and continue to be widely used today. OCs provide immediate protection as well as near-immediate return to fertility, a reality that opens the door for unintended pregnancy should the user fail to adhere to the daily pill-taking regimen. In fact, women using OCs often miss pills, a pattern that is borne out in daily regimens with other medications as well. Moreover, discontinuation of OCs occurs frequently despite a continuing need for contraception with studies reporting that up to 60% of women initiating OCs discontinue within the first six months.¹⁴, ¹⁷, ²¹

Because so many women in the US experience unintended pregnancies despite widespread use of OCs, research on the reasons for discontinuation is needed both for knowledge of the forces at play and for informing future contraceptive policies and practices. This call to action is in no group more
critical than Hispanics in the US, a group experiencing one of the highest rates of unintended pregnancies. Armed with a better understanding of the reasons that women in the US choose to discontinue OCs, the health care community can better serve women and their family planning needs.

Reasons for discontinuation of OCs are complex and include side effects, method-related reasons, psychosocial variables and relationship characteristics. While side effects, method-related reasons, and psychosocial variables have been reported widely in the literature, a paucity of research has been conducted on the importance of relationship characteristics, particularly partner influence. Moreover, it is only recently that Hispanics began appearing in the literature as subjects of study. The patterns and motivations of Hispanics' contraceptive use vis-à-vis cultural attitudes, language variables and relationship characteristics deserve further exploration.

The association between partner influence and OC discontinuation was investigated through a review of the literature and an analysis of data from a prospective study. The literature review discusses current research in unintended pregnancy patterns in the US, contraceptive and specifically oral contraceptive use, demographics and reasons for discontinuation of OCs, and the role of partner influence on contraceptive use and discontinuation, with particular attention to research on Hispanics. The second paper describes a prospective study of OC discontinuation in predominantly Dominican-American women initiating OCs in an urban family planning clinic. Partner and relationship characteristics collected in baseline and follow-up interviews were used to
investigate the association between partner influence and OC discontinuation. One limitation of this paper and of other papers reporting on patterns of OC use among Hispanics is that the term Hispanic refers to an aggregate group of women who are racially, ethnically, and culturally diverse. Where possible, more specific terms are used for the group of women under discussion.

*Patterns of unintended pregnancy and fertility*

About half of all pregnancies in the US are unintended at the time of conception. Approximately half of women between the ages of 15 and 44 have experienced at least one unintended pregnancy in their lives. While it is a reality for women of varied race and socioeconomic status, certain groups are disproportionately affected. Teenagers (ages 15 to 19), unmarried, black, and poor (less than 100% of poverty status) women represent the highest risk for unintended pregnancies. Approximately 78% of all pregnancies in teenagers and in never-married women are unintended, while the percentage for black and poor women is about 70% and 60%, respectively.¹ Women who are aged 18 to 24, poor, and Hispanic or black have higher rates of unintended pregnancy than do their counterparts,¹ largely as a result of a higher overall pregnancy rate; thus more unintended as well as intended pregnancies occur among these women.

While fertility rates dropped from 1991 to 1997, they have been increasing since 1997. From 1999 to 2000, Hispanics have experienced a 4% increase compared to a 2% increase in fertility rates for whites and blacks. Moreover, the overall fertility rate for Hispanics is the highest of all racial groups, and nearly

3
twice that of non-Hispanic whites.\textsuperscript{2} Not only have Hispanics been left out of the promising trend in the almost ubiquitously declining teenage fertility rates, but they have recently borne a disproportionate increase in fertility rates for all ages of women.

\textit{Consequences of unintended pregnancy}

About half of the unintended pregnancies in the US result in births and the other half in abortions.\textsuperscript{3} Unintended pregnancies, including both \textit{mistimed} pregnancies (pregnancies occurring sooner than the woman desired) as well as \textit{unwanted} pregnancies (pregnancies occurring to women who wanted no more pregnancies) carry consequences, regardless of the outcome. Although abortion is a safe medical procedure with a total complication rate of less than 1\%,\textsuperscript{5} it can burden women psychologically and economically. Despite hindered access to abortions and a hostile political climate, the rate of abortions in this country is two to four times higher than other Western democracies.

A study conducted by the Institute of Medicine in 1995 reported on the consequences of unintended pregnancies and unwanted births for both the mother and the child. Mothers with unintended pregnancies are less likely to seek early prenatal care and more likely to use tobacco or alcohol during pregnancy. Children of unwanted births are more likely to be born low birthweight, to die within the first year of life, to be abused, and to lack resources for proper development. Moreover, the mother may be at a greater risk for depression, physical abuse, and disharmonious relationship with her partner.\textsuperscript{3}
Henshaw's study of nearly 10,000 abortion patients in 1994-95 revealed that the increased fertility rate among Hispanics has been accompanied by an increase in both the abortion rate as well as the percentage of abortions obtained by Hispanics. Moreover, while 67% of non-Hispanic white abortion patients had been using a contraceptive method during the month they became pregnant, only 45% Hispanics had been doing so.\textsuperscript{6} These findings are further supported by data from the National Survey of Family Growth (NSFG) which describe a lower likelihood of contraceptive use among Hispanics.\textsuperscript{7} The disproportionate increase in Hispanic fertility accompanied by a less than robust use of contraception are patterns that foreshadow a perpetuating struggle for Hispanics with unintended pregnancy and its consequences.
II. Contraception

Contraceptive use in the US

About half of all unintended pregnancies occur in women who were using some form of reversible contraception,\(^3\) and Forrest et al. estimate that a woman spends approximately 75% of her reproductive years trying to avoid pregnancy.\(^9\) While policymakers continue to debate whether abstinence or contraception is the most appropriate means to avoid pregnancy, women across the US have integrated contraception into their daily lives. Data from the 1995 National Survey of Family Growth show that almost all women (98.4%) of reproductive age (ages 15 to 44) have ever used any method of contraception, while nearly two-thirds of women were currently using a method of contraception. Sterilization, either male or female, was the most popular method for women using contraception, with about 4 out of 10 women relying on this method. Twenty-nine percent of women used OCs and 20% of women used condoms, while 7% used IUD, implant, injectable, or diaphragm. For younger women, however, OCs were the most popular method, with approximately half of women ages 15 to 24 and one-third of women ages 25-34 using OCs.\(^7\)

Hispanic contraceptive use

While the fertility rate for Hispanics far exceeds that of other ethnic groups, recent data show that Hispanics also tend to rely more heavily on female sterilization, are twice as likely to use implants and injectables (the most effective methods after sterilization), and are slightly less likely to use oral contraceptives.
(23% versus 29%). Moreover, Trussell and Vaughan found that Hispanic women who do use contraception are more likely than non-Hispanics to experience a contraceptive failure for all reversible methods and for the male condom. Overall, however, Hispanics are less likely than whites or blacks to use any method of contraception. While culture may play a role in Hispanics' contraceptive use, it is not a sufficient explanation for the lower rates of contraceptive use seen in this group. Unger and Molina investigated the relationship between acculturation of Latina women and contraceptive use, and found an inverse relationship between acculturation and contraceptive self-efficacy. Latinas who were more acculturated perceived less social support for contraceptive use and were both less likely to intend to use contraceptives and less certain of being able to use contraception in the future. The association between acculturation and contraceptive use, however, remains complex as various studies have found that acculturation correlates both with an increase in risky sexual behaviors and in condom use. More studies are needed to clarify the role of acculturation for Hispanics wishing to avoid pregnancy.

Oral contraceptives and consistency of use

Although OC use in the US has declined since the 1980's among young women and minorities, it remains one of the most popular forms of contraception. Over half of teenagers report having ever used OCs, as well as greater than 80% of women of all ages. Use of OCs involves adhering to a daily regimen of pill-taking which can pose a challenge to many women. The reality of inconsistent
use is borne out in the appreciable gap between perfect use and typical use failure rates. Women who use OCs perfectly – i.e. miss no pills – can expect a 0.1% failure rate for the first year of use while the pattern of typical use yields a 5% failure rate.\textsuperscript{14} Peterson et al. reported on consistency of OC use among 1,485 pill users using data from the 1995 NSFG and found differences along racial lines. Over 25% of Hispanics had missed two or more pills in the three months prior to the interview, compared with only 14% of non-Hispanic whites.\textsuperscript{15} The CDC found a similar pattern of OC consistency with 22% of Hispanics reporting inconsistent pill use, compared with 12% of non-Hispanic whites.\textsuperscript{12} Interestingly, though, Spanish-speaking Hispanics were significantly more likely to report never missing a pill than were English-speaking Hispanics, whites, and blacks.\textsuperscript{16} Hispanics were less likely to use OCs in conjunction with another method, thus placing them at higher risk for unintended pregnancy.\textsuperscript{15} It is likely that this study underestimates the percentage of women using OCs inconsistently as only women who had been using the pill for at least three months were included in the analysis. This point is underscored by the fact that women using the pill for only three to six months were twice as likely to use the pill inconsistently as were women using the pill for more than six months.
III. Discontinuation of Oral Contraceptives

Discontinuation and unintended pregnancies

Women choosing to use OCs frequently discontinue the method before a year has passed, placing them at risk for an unplanned pregnancy. It has been estimated that about 30% of the 3.5 million unintended pregnancies each year in the US is attributable to OC failure, misuse, or discontinuation, and a full 20% attributable solely to OC discontinuation. Estimates of discontinuation within the first year vary widely, depending on the population of women being studied and the timeframe being measured. Studies focusing on OC discontinuation in adolescents who are post-partum report discontinuation rates around 50% at six months after prescription, while a study comparing post-partum and post-abortal adolescents found half had discontinued at one year. Discontinuation rates for women of all ages, however, tend to be slightly lower on average, ranging from 30% to as high as 60% at one year.

Several limitations of the existing discontinuation data provide a challenge to fully understand both the broad picture and the nuances of OC discontinuation. First, almost all research on OC discontinuation has employed a follow-up of no less than six months, despite a finding by Rosenberg et al. that most of the women discontinuing the pill did so within the first two months of use. While limited data support the notion that most OC discontinuation occurs very early, few studies report using such a shortened timeframe.

Second, much of the literature on discontinuation derives from the 1995 NSFG, a set of data that is comprehensive, yet suffers from an underreporting of
abortion. The consequence of abortion underreporting is not clear, but may indicate an underreporting of contraceptive failure and discontinuation.\textsuperscript{10,22} Lastly, some women discontinue OCs because they are pregnant, desire pregnancy, or have no sexual partner. Women who discontinue for any of these reasons are not at risk for unintended pregnancy and thus should be excluded from the analysis. In studies that included these women, OC discontinuation does not always correlate with risk of unintended pregnancy. When only OC discontinuation for a method-related reason is considered, 18% of women discontinued at six months, 32% at one year, and 51% at two years.\textsuperscript{10}

\textit{Demographics of discontinuation}

Very little research has been done on demographic correlates of OC discontinuation, as most study populations are young women, most often African-American adolescents or white college students. A few patterns, however, are borne out in the literature. One study using data from the 1995 NSFG found that blacks and low-income women were more likely to discontinue (relative risks of 1.3 and 1.4, respectively),\textsuperscript{10} findings supported by data from the NSFG fifteen years earlier.\textsuperscript{23} Other studies of women initiating or switching OCs, however, found no predictive value in demographic variables, though race was not even considered in one of the studies.\textsuperscript{21,24} Although OCs are not the most common form of contraception for women over 30, almost four out of ten women in this age group are at risk of unintended pregnancy.\textsuperscript{3} And one study reports that women over 30 are less likely to resume contraception after discontinuing,\textsuperscript{10}
underscoring the need for more contraceptive research in this population. Similarly, as more evidence accrues regarding the differential sexual and reproductive behaviors of various groups other than whites and blacks, not the least of which is the disproportionately increasing fertility rates for Hispanics and Asian/Pacific Islanders, the need for more research on ethnic variations in contraceptive behavior becomes more urgent.

Some general agreement exists regarding user characteristics related to OC discontinuation. Women who have never used OCs are more likely to discontinue than are women who have ever used OCs; one study reports that women starting the pill for the first time are twice as likely to discontinue by six months as are women who have used the pill in the past (32% compared to 16%).\textsuperscript{21} In a review article, Trussell and Kost show rates of discontinuation for new users are higher than those for previous users, citing a 50% drop-off in OC use by one year.\textsuperscript{25} Supporting this data is the observation that most side effects of OCs occur in the first few months, predisposing new users to discontinue the method.\textsuperscript{26} Adolescents also exhibit higher rates of discontinuation, a finding that could explain the difference between ever-users and never-users as adolescents are more likely to be new starts than are adults. Alternatively, the differences in relationship characteristics between adolescents and adults may serve to explain the different rates of discontinuation.

\textit{Explanatory variables for OC discontinuation}
Reasons for discontinuation can be categorized into medical and non-medical, medical referring to side effects (perceived or real) while non-medical reasons include method-related reasons (forgetting pills, fear of side effects or health risks), no longer needing contraception (actually pregnant, desiring pregnancy, not sexually active), and psychosocial reasons (attitude, personality, parental/peer/partner influence). While some data suggest that no longer needing contraception is the main reason for discontinuing the pill,²¹ ²⁷ most data conclude that side effects such as weight gain, breakthrough bleeding, nausea, headache, breast tenderness, mood swings, acne and hirsutism are the major reasons for OC discontinuation.²⁵ ²⁸³⁰ One study of low-income women, however, found that a significant proportion of OC discontinuers had done so for a reason unrelated to side effects.²⁴ The following discussion will focus on OC discontinuation that places a woman at risk for an unintended pregnancy.

Side effects

Data from the 1982 NSFG reveal that one-third of women discontinuing OCs did so without consulting a clinician and cited at least one side effect as a reason for discontinuing.²⁶ Because most of the women surveyed in the 1982 NSFG had used one of the older formulations of OCs, ones that contained higher doses of estrogen and more androgenic progestins, it is understandable that physical effects figured prominently into their decisions to quit the method. However, the role that side effects play in a woman’s decision to stop using OCs appears to persist even with lower-dose formulations. In a study of over 4,000
European women, the experience of one side effect was associated with a 1.5
times higher risk of discontinuation, while the experience of three side effects
yielded a 3.2 times higher risk of discontinuation.\textsuperscript{28}

Anywhere between 30\% and 40\% of women discontinuing OCs report
side effects.\textsuperscript{28} Weight gain and nausea are two of the most commonly reported
reasons for discontinuing with 11.4\% and 10.2\% of women in one study citing it
as their main reason.\textsuperscript{26} Bleeding irregularities are reported in a significant portion
of discontinuers, with one study reporting that 12\% of women discontinuing
reported bleeding irregularities as the main reason.\textsuperscript{21} Bleeding irregularities are
more often associated with low-dose estrogens, progestin-only pills, and poor
compliance, and can often be alleviated by switching OCs.\textsuperscript{14, 29, 31} Nausea and
breast tenderness tend to disappear after a few months and are estrogen-related
effects that are uncommon in current OC formulations containing less than 50
micrograms ethinyl estradiol. Headache too is commonly reported as a reason
for discontinuation, and is difficult to assess due to the high prevalence of
headaches in the general population.

Although the androgenic effects of OCs – weight gain, acne, and
hirsutism – have abated over time with the introduction of less androgenic
progestins, they continue to be commonly reported reasons for discontinuation.\textsuperscript{26, 32}
Weight gain is frequently reported as a side effect and a fear of women using
and discontinuing OCs, despite concurrent lines of research demonstrating no
relation to OC use\textsuperscript{14}. In fact, when daily weight measurements were taken on
women using OCs, the average weight change over four months was 0.0
pounds, with most women experiencing either no change or weight loss.\textsuperscript{33} Furthermore, patients in a double-blind, placebo-controlled trial randomized to either a triphasic OC (Ortho Tri-Cyclen®) or placebo reported equal incidences of weight gain as well as headache, nausea, dysmenorrhea, breast pain, and other commonly reported OC side effects.\textsuperscript{34} New lower-dose progestins have been found not only to decrease the incidence of androgenic side effects, but to improve existing acne and hirsutism.\textsuperscript{35,36} While the actual presence of side effects has been reduced with newer formulations of OCs (lower estrogen dose and less androgenic progestins), the experience as well as the fear of side effects continues to be a significant cause of OC discontinuation, and by extension, unplanned pregnancy.

\textit{Method-related reasons}

Method-related reasons for discontinuation include difficulty using the pills (forgetting pills, confusion over how to take them), inability to obtain pill refills (too expensive, too hard to get), and fear of health risks and side effects. Method-related reasons in addition to real or perceived side effects are believed to be a major cause of discontinuation, and one study found that over 30\% of women initiating OCs discontinued the method at one year for a method-related reason.\textsuperscript{10} A separate study, however, estimates that only about 20\% of women discontinuing OCs did so for a method-related reason.\textsuperscript{21} While the literature is unequivocal in recognizing OC misuse as a common problem,\textsuperscript{15,17,28} it is less certain of the role that OC misuse plays in discontinuation. Nevertheless, in
acknowledging that misuse is somewhere on a continuum with perfect use and discontinuation, method discontinuation may be an indicator of improper use.\textsuperscript{37} And while researchers have investigated barriers to OC use, few studies focus on the barriers to OC continuation, such as repeat clinic visits and cost of OCs. More research on method-related reasons for discontinuation would allow for greater ability to respond to the needs of women wishing to avoid pregnancy.

\textit{Psychosocial reasons}

As with much of the literature on OC discontinuation, the exploration of psychosocial correlates of discontinuation has primarily focused on adolescents. A variety of psychological and sociological theories have been employed to explain contraceptive use, including Luker’s influential theory of contraceptive risk-taking,\textsuperscript{38} Fishbein’s theory of reasoned action,\textsuperscript{39} Rosenstock’s health belief model\textsuperscript{40} and Zabin’s theory of personal calculus of choice.\textsuperscript{41} Most of this literature, however, focuses on the psychosocial influences on contraceptive behavior in general, and not OC discontinuation. Research on personality characteristics demonstrates no consistent findings for self-esteem as a predictor of contraceptive use and mixed results for the effect of locus of control, the belief that one can control what happens.\textsuperscript{3} There is some evidence, however, that self-efficacy, the belief that one can perform a specific behavior, is positively associated with contraceptive use.\textsuperscript{3, 42, 43}

Attitudes toward sexual behavior and contraception have been examined for their impact on contraceptive use, and there is strong evidence to
show that guilt or embarrassment about sexuality can lead to contraceptive non-use. Likewise, many studies have found that attitudes surrounding contraceptive methods greatly influence use. Some research on substance abuse indicates an association with contraceptive non-use, while other research seems to suggest that contraceptive non-use and substance abuse are both aspects of larger risk-taking behaviors. Parental influence on contraceptive use lacks strong support from research, as most studies have found that neither communication nor parental attitudes about sex and contraception affect an adolescent's use of contraceptives. One study, though, found that parent-teenager discussions of sexuality and sexual risk are significantly associated with teenager-partner discussions as well as increased condom use. More robust evidence, though, supports the influence of peers on contraceptive behavior, and one study of premarital contraceptive use found contraceptive use most strongly predicted by the number of close friends thought to use contraceptives. Jaccard et al. examined a set of psychosocial factors and their effect on OC discontinuation and switching, and found the only factor predictive of switching was the clinic experience. Women who had negative experiences with the clinic were more likely to discontinue than were women whose experiences were positive.

*Implications of OC discontinuation*

While the literature is sparse and inconsistent in reporting the likelihood of discontinuation among racial and socioeconomic lines, there is widespread
agreement that first-time OC users and adolescents are more likely to discontinue. Many studies report that side effects such as weight gain (despite studies demonstrating no association), nausea and bleeding are the major reason for discontinuation. Other studies provide evidence of method-related reasons such as missing pills, confusion about taking them or an inability to obtain more refills as responsible for 20% to 30% of discontinuation. Low self-efficacy, guilt and embarrassment about sexuality, substance use and peer attitudes are also described as contributing to the phenomenon of discontinuation, though the literature is less clear on the importance of these psychosocial variables.

While a good deal of research has been published on the reasons for discontinuation, several gaps are apparent. Most research uses a timeframe of six months or more to measure discontinuation, potentially obscuring the details of precisely when discontinuation occurs. In addition, the bulk of the discontinuation research pertains to non-Hispanic young women. As fertility rates among Hispanic women increase, it is imperative that more research be conducted on patterns and reasons of discontinuation for this group.
IV. Partner Influence

Contraception, the act of protecting oneself from pregnancy, is a practice that inherently involves two people, though varying degrees of involvement are required for different methods. Coitus-dependent methods (condom, diaphragm, sponge) necessitate some partner negotiation around intercourse for effective use whereas coitus-independent methods (pill, IUD, injectable, implant) can be effectively used without broaching the topic at each sexual encounter. Regardless of method type, however, there is strong evidence that male partners significantly influence all aspects of contraceptive use. The remainder of this literature review will discuss the research on partner influence.

Partner influence on sexual behavior

Fishbein's and Ajzen's theory of intention to perform a behavior can be applied to the concept of partner influence on a woman's decision to use contraception. According to the theory, two factors are pertinent to a person's intention to perform a behavior: the attitude toward that particular behavior, and the person's subjective norm, the perception that close friends and relatives believe this is an acceptable behavior. Just as various studies support the notion that attitudes surrounding contraception and sexuality play major roles in contraceptive use, so is there evidence that others' views of a behavior are relevant to contraceptive decision-making. And in an area as intimate as contraception, it is not unreasonable that a partner's perception of a particular behavior will influence whether that behavior is performed.
Certain demographic characteristics of male partners are related to sexual behavior, and one of the most commonly studied is age of the male partner. Men are typically older than women in most relationships and are older than women when involved in a pregnancy.\textsuperscript{51} Half of women in a national survey had a partner who was within two years of her age, 20% had a partner three to five years older, and 18% had a partner six or more years older. For women aged 15 to 17, 29% had a partner three to five years older and 7% a partner six or more years older,\textsuperscript{51} a pattern that is somewhat alarming given the 3.7 times higher odds of pregnancy in women under 18 whose partners are six or more years older. Moreover, one study reveals that among women under 18 and at risk of unintended pregnancy, women with a partner six or more years older are less likely to practice contraception than those whose partners are within two years of her age (66% versus 78%).\textsuperscript{52} and less likely to use contraception at first intercourse.\textsuperscript{53} Research has also attempted to tease out the factors at play with respect to behavior at first intercourse, and in a separate analysis of the 1995 NSFG, women whose first partner was seven or more years older were less likely to have used contraceptives at first intercourse.\textsuperscript{54}

Other demographic data is poorly represented in the literature with only a brief mention of the influence of education and income status. Men with less than a high school education are less likely to be using a contraceptive method to protect against pregnancy.\textsuperscript{55} Young men, ages 15 to 17 and living in poor neighborhoods are more likely to be pleased about an unintended pregnancy and
view it as enhancing their masculinity than those in more affluent areas,\textsuperscript{56} despite the fact that almost half of all pregnancies to men under 18 end in abortion.\textsuperscript{51}

Relationship characteristics such as living status, duration and nature of relationship are variables that also influence sexual behavior. Henshaw's analysis of national abortion data revealed that women cohabitating (living with but not married to) with a partner were 3.6 times as likely to have an abortion as compared to other women,\textsuperscript{6} and a study of over 500 low-income women determined that cohabitating women were less likely than married women to use dual methods of contraception (condom plus efficient method).\textsuperscript{57} In addition, teenagers in the UK with an unintended pregnancy were more likely to be cohabitating with a partner and in a longer relationship than never-pregnant teenagers using contraception.\textsuperscript{58} A smaller study found that women were less likely to say they had not wanted to conceive if they had been cohabitating with their partner at the time of the conception,\textsuperscript{59} a finding not obviously concordant with the above conclusions. Despite somewhat dissonant results, cohabitation appears to introduce the potential for greater partner influence and couple negotiation with respect to reproductive behavior and decision-making, and that influence can lead to a variety of outcomes. In a study of adolescents' utilization of contraceptive clinics, 31\% reported they had delayed their first contraceptive visit because they were awaiting a closer relationship with their partner.\textsuperscript{60}

Only fairly recent studies including partner influence variables detail any patterns for Hispanic men and women. From a survey of low-income women at risk for unintended pregnancy, Hispanic women are more likely than whites or
blacks to be married, with those who speak Spanish more likely than those who speak English (61% compared to 41%). Hispanics are also more likely than women of other groups to be cohabitating, to be with a steady partner for three or more years, and to have frequent sex. And although Hispanic women of all ages and Hispanic adolescent males are more likely than their white counterparts to discuss contraception with their partner, they are less likely to use any method of contraception.\textsuperscript{15,56} Marsiglio measured adolescent males' attitudes toward paternity and contraception and reported that while young Hispanic men from poor neighborhoods are more likely to be very pleased about an unintended pregnancy and "feel like a man", the same is not true for Hispanic men from average or very good neighborhoods. Poor Hispanic adolescent males are also less likely than their white counterparts to believe that partners are equally responsible for a child.\textsuperscript{56} In a study of Hispanic adolescent mothers, 13% of whom were married and 34% cohabitating, almost half of the pregnancies were wanted by the father of the baby.\textsuperscript{61}

\textit{Partner influence on contraceptive behavior: condom use}

Nowhere is partner influence in negotiating contraception more salient than in condom use. As a coitus-dependent method whose purpose is not just pregnancy prevention, but STD prevention as well, condom use invokes a somewhat different set of motivations, behaviors, and decisions. Male partner influence on condom use is likely to be different from partner influence on the use of non-coital methods, namely oral contraceptives. But to dismiss the wealth of
literature on condom use would be shortsighted as the data can speak to the
dynamics between women and their male partners, and at the very least, can
provide insight into one of the most widely used contraceptive methods in the
US. A variety of condom outcomes have been utilized in research studies, some
of which are condom use at last intercourse, long-term condom use, effective
condom use, consistent condom use, dual method use (condom plus another
method) and intention to use condoms. There are certainly more condom
outcomes not mentioned here, as this discussion focuses only on the condom
literature that pertains to partner influence.

Communication with a partner appears to be the most consistent
predictor across a variety of condom outcomes. Women who attend family
planning clinics are more effective condom users if they discuss sex and birth
control with their partner,⁶² teens who communicate with their partner, discussing
topics of sex, birth control, STDs, and HIV/AIDS exhibit greater lifetime use of
condoms,⁴⁶ and both men and women of all ages are more likely to intend to use
condoms if they talk with a sex partner about condom use.⁶³ Among women,
emotional closeness is also associated with a greater intention to use condoms.⁶⁴

Research on condom use consistency and partner influence has tended
to focus on the types of relationship or partner as predictor variables. Women
are more likely to use condoms consistently if they are in a new or casual
relationship⁶⁵,⁶⁶ or, for adolescents, if the relationship is of short duration.⁶⁷
While much of the older literature pertaining to living situation categorized women
as married or unmarried, more recent studies have begun to look at people who
cohabitate, with one study reporting that cohabitation is significantly associated with long-term condom use. Another study found that women who either cohabitate or do not live with a partner are more likely to use dual methods, a finding consistent with women's increased condom use with casual partners and in new relationships. Riehman et al. also reported that dual method use is more likely among women who make joint family planning decisions with their partner, and less likely among women who share economic decisions with their partner (compared with women who are the sole economic decision-makers).

Partner influence on contraceptive behavior: general contraceptive use

Men and women often diverge in their views on the important characteristics of contraception and the decision to use contraception. In fact, when surveyed through the National Survey of Men and the National Survey of Women, women rank pregnancy prevention as the most important characteristic of contraception and STD protection the second most important while men consider STD prevention to be just as important as pregnancy prevention. In addition, women but not men place greater importance on a method's ease of use and the need to plan ahead than on a method's interference with sexual pleasure. These differences in priorities extend to specific methods, as women are more inclined than men to have favorable perceptions about the pill and are less likely to consider the condom very good at preventing pregnancy (29% versus 46%). Despite different priorities regarding contraceptive use, couples
often do make joint decisions and these differences may influence how effectively and consistently a contraceptive method is used.

A separate body of literature details the influence of partners and relationship characteristics on the effective use of contraception (often defined as using an effective method, or using a method reliably) and use of contraception at last intercourse, the foundations of which extend back into the 1970s. Those partner variables that have been researched with respect to contraceptive use can be classified into three broad categories: (1) type of relationship or type of partner, including duration of relationship, seriousness and exclusivity of relationship; (2) communication, including frequency of communication, topics of discussion; (3) partner influence, including partner attitude, support and approval.

A variety of studies on sexual behavior indicate that both women and men often act differently depending on the type of relationship and partner, and contraceptive behavior is no exception. Among unmarried male and female college students, knowing one's partner for a long time and being in a steady relationship are associated with more reliable contraceptive use, and adolescents who just met their sexual partner are less likely to have used contraception. One study, however, found that adolescent males appear to be more effective contraceptors with casual partners than with established girlfriends. Number of sex partners is associated with contraceptive use with one study finding that women who have more sex partners are more likely to use contraception at last intercourse. But another study found that among women with an unplanned pregnancy, women who have one partner are more likely than
those with more than one partner to use effective contraception. While there is strong evidence to support the notion that relationship and partner stability support more effective contraceptive use, there is some indication that relationship instability and more risky sexual behavior may encourage more careful contraception.

As in the condom literature, communication emerges as a significant contributor to effective contraceptive use. In a study of adolescent couples, those who felt that they had not sufficiently discussed contraception were also the most at risk for unintended pregnancy, whereas those couples with good communication patterns were more effective contraceptors. Communication about general topics and sexual matters are significant indicators of effective contraceptive use among undergraduates as well as low-income women, with one study noting that frequency of intimate communication is an important predictor. In-depth interviews of men and women regarding communication within a relationship revealed a common theme for why some feel unable to communicate about sex. Many are concerned about a partner's negative reaction to initiating a discussion of contraception, with females feeling slightly more unable than males to communicate about sex. When presented with future scenarios of discussing contraception, however, most reported only positive reactions, indicating that the fear of a partner's negative reaction to discussing sex and contraception is largely unjustified.

Direct factors related to partner influence such as partner approval of the method and partner's desire for pregnancy are less represented in the
literature, but extend back to 1978 when Thompson and Spanier found that partner influence remained significant factor in contraceptive use even in a multivariate model.\textsuperscript{75} The literature since then has been sparse but supportive. Males 19 and younger are more likely to use contraception at last intercourse when they agree upon the method with their partner,\textsuperscript{76} and in college-age men and women, partner support and encouragement for contraception is associated with use of effective contraception.\textsuperscript{70,77} In a study of low-income, mostly Hispanic women using Depo-Provera, however, partner approval of the method did not have a significant effect on discontinuation of the method.\textsuperscript{78} Some significant drawbacks to the literature on partner influence are the older nature of the studies and the overwhelming representation of college-age and adolescent males and females. While there exists the skeleton of a body of evidence supporting partner influence as a predictor of contraceptive use, more studies focusing on women of different ethnicities and ages are needed to more fully understand the scope of the association.

\textit{Partner influence on OC use}

The Kaiser Family Foundation conducted a national survey in 1997 on public perception about contraception. One-fifth of the women reported that their partner had a lot of influence in their decision to use birth control pills, and nearly half reported any influence by their partner.\textsuperscript{79} The literature focusing on OCs and partner influence has utilized the outcomes \textit{OC use} and \textit{consistent OC use} while the predictor variables fall into the two categories of \textit{relationship characteristics}
and partner influence. Length of time with a partner appears to be significant as women in longer relationships are more likely to use OCs\textsuperscript{16} and adolescents who maintained the same partner throughout the six months of a study were more likely to be consistent OC users.\textsuperscript{80} Women and men who report frequent sex are more likely to be using OCs,\textsuperscript{16,77} and adolescents with a partner five or more years older and women with multiple sex partners are less likely to use OCs consistently.\textsuperscript{80,81} In a study of college age women, those women who felt stability and intimacy within their relationship were significantly more likely to use OCs for contraception.\textsuperscript{77}

Whitley found that perceived partner support was correlated with choosing OCs as a method\textsuperscript{77} and Forrest and Frost found that partner support as well as a partner's happiness about OC use were associated with using OCs consistently.\textsuperscript{80,82} But while the study by Forrest and Frost found that talking with a partner at least once a month about contraception was associated with any use of contraception and condom use in particular, they did not find that communication to be associated with OC use.\textsuperscript{16} The few studies looking at partner influence as it relates to OC use all agree that women are more likely to use OCs and use them consistently when they are involved in relationships characterized by stability, intimacy and partner support. While the argument could be made that women who use OCs consistently are less likely to discontinue the method, no data exist on the relationship between partner influence and OC discontinuation.
Implications of partner influence

Partner influence is just one external force that can influence a women's decision to use OCs as a method of contraception. No data reported specifically on the relationship between partner influence and OC discontinuation, but several conclusions can be drawn from the existing body of literature. Factors such as side effects, access to OCs, knowledge of how to use them, self-efficacy and partner and peer influence are associated with OC use or OC continuation. Women who misuse OCs are more likely to discontinue using them. Figure 1 describes all of the factors discussed in the literature that are related to OC use as well as the proposed mechanism of inconsistent use by which these factors may lead to discontinuation. Side effects such as nausea, weight gain and bleeding and method-related reasons such as lack of access, forgetting pills and confusion about how to take the pills are the major reasons for discontinuation. Factors influencing the experience of side effects and method-related problems include cultural values, peer and partner influence and a woman's self-esteem, self-efficacy and ambivalence about OC use.

Partner influence is a broad topic, spanning issues of communication and negotiation, concordant or discordant fertility motivation, cultural differences, age-specific differences and relationship status. A wealth of studies looking at these various aspects of partner influence confirms the notion that male partners play a major role in influencing a woman's contraceptive decision-making process through a number of mechanisms.
While variables such as older age, low-income status and longer duration of relationship appear to be associated with a higher risk of unintended pregnancy, the influence of cohabitation on unintended pregnancy is less clear. Communication in a relationship is correlated with increased condom use, increased OC use and more effective contraceptive use overall. Particular aspects of communication described by the literature include agreement about the method and an ability to communicate about sex and intimate topics. Stability, intimacy, partner support and happiness about the method were all predictors of choosing OCs as a method and consistent use of OCs. No studies, however, have studied the relationship between partner influence and OC discontinuation, and the question remains, whether that relationship is the same as for the outcomes studied.

Interestingly, Hispanic couples are more likely to discuss contraception and their relationships tend to be of longer duration than those of non-Hispanic counterparts. While the literature suggests that these relationship characteristics are associated with increased contraceptive use, Hispanics are less likely to use any contraceptive method and have the highest rates of unintended pregnancy. Given the available data on partner influence, it is uncertain whether the relationship factors influencing Hispanics’ contraceptive use are different from those of other groups or if the nascent literature is simply insufficient to elucidate the common relationship factors that influence contraceptive use. At the very least, more research is needed to further understand the role of Hispanic
relationships and male partners on contraceptive use in general and OC use and discontinuation in particular.

There is good evidence that partner influence is associated with the motivation to use OCs as well as how consistently the OCs are used. Although the definition of partner influence and its precise relationship with OC discontinuation is unclear, it is likely that it acts through a woman's desire to contracept, as ultimately it is the woman who must take or not take each pill. We can assume that women who obtain OCs from a clinic and initiate use must have at least some degree of motivation to contracept. To be sure, that motivation to use OCs may be on a spectrum from unsure to very sure. The partner could either support or not support the woman's decision to both contracept and use OCs as the method of contraception. Whatever the influence of the partner, that force must be filtered through the woman and her unique set of psychosocial and cultural characteristics. Figure 2 describes a general model of how partners might influence a woman's decision to discontinue OC use. A partner's desire for pregnancy might have a different influence on a woman depending on the seriousness of the relationship. The partner's influence is necessarily filtered through a woman's cultural and individual beliefs and is incorporated into her decision to continue or discontinue OCs.
V. Looking Forward

The number of Hispanics in the US grew by 58% in the last decade, jumping from 22 million to 35 million, with the largest increase among younger ages. Hispanics in the US are younger than non-Hispanics, and thus a greater proportion are of reproductive age. Their birth rate in 2000 was 105.9 births per 1,000, almost twice that of non-Hispanic whites, with the rates for teens nearly three times higher. Around half of the pregnancies to Hispanics are unintended and half of those pregnancies end in abortion. While they are one of the groups most at-risk for unintended pregnancy, Hispanics have a lower rate of contraceptive use, though this appears to be largely concentrated in those Hispanics who speak English. The data concerning Hispanics are scarce, but there is evidence that that they are a growing population in need of contraceptive services and that there are significant differences across ethnic, age, educational and acculturation levels.

Oral contraceptives are one of the most popular methods of birth control, being both reversible and highly effective. Approximately one in four Hispanic women in the US currently uses OCs, though often inconsistently and without a second method. To the extent that method discontinuation is an indicator of improper use, Hispanics are particularly at risk for quitting OCs. Approximately half of women initiating OCs discontinue within the first six months and one study asserts that 20% of the 3.5 million unintended pregnancies each year in the US is attributable solely to OC discontinuation. While discontinuation of OCs is widely agreed to be both frequent and risky, we
know very little about the individual and relationship contexts in which this discontinuation occurs.

A different pattern of relationship factors exists for different contraceptive methods. Condoms require a great deal of couple negotiation and communication for effective use, while more effective methods such as injectables and implants require virtually no negotiation. The relationship influence for OC use lies somewhere in between, as its effectiveness hinges on daily adherence, thus opening a door for partner influence to come into play. Hispanic women are more likely to be involved in longer relationships, an indicator of likelihood of OC use, and are more likely to talk with their partners about contraception. Given that these indicators are correlated with contraceptive use, it is natural to hypothesize that Hispanics would be effective contraceptors, and yet the literature illustrates just the opposite.

While the growing preponderance of Hispanics of reproductive age has spawned an increased representation in the reproductive health literature, much is still unknown about the specific risks faced by Hispanics in the US. In order to understand Hispanics and their unique reproductive health, more research must recognize ethnic and acculturation differences as potential modulators of reproductive behavior. More specifically, however, great ambiguity surrounds the issue of Hispanics, their use of OCs and their reasons for discontinuation. Further research is needed to describe the experience of Hispanics with OC use and the effect of partner influence and relationship characteristics on OC discontinuation.
Figure 1. Factors related to oral contraceptive discontinuation

- Peer influence
- Self-efficacy
- Partner and relationship influence

- Side Effects
  - Nausea
  - Weight gain
  - Bleeding

- Method-Related Reasons
  - Forgetting pills
  - Confusion
  - Lack of access

- Missing Pills

- Discontinuation
Figure 2. A model of partner influence on oral contraceptive discontinuation
VI. References


Partner influence on oral contraceptive discontinuation: prospective study

1. Introduction

Approximately half of women ages 15 to 24 currently use oral contraceptive pills (OCs)(1) and over 80% of all women report having ever used OCs for contraception(2). Many women initiating OCs discontinue the method before a year has passed, and one study found that most discontinuation occurs within the first two months.(3) Studies report OC discontinuation rates from 30% to 60% at one year,(3-5) and one study estimates that 20% of unintended pregnancies in the US is attributable to OC discontinuation.(5) Known reasons for discontinuation include side effects,(6-10) method-related reasons such as forgetting pills, confusion over how to take them and lack of access to refills,(5, 8, 11, 12) low self-efficacy, unfavorable attitude toward OCs and peer and parental influence.(13-20) Data from studies of partner influence on general contraceptive use and condom use show that contraceptive use is lower when the partner has less than a high school education and is more than five years older than the woman.(21-24)

The few studies that have reported specifically on partner influence have looked at choice of OCs as a method, OC consistency and OC continuation as outcomes. In a national survey by the Kaiser Family Foundation, 20% of women reported that their partner had a lot of influence in their decision to use OCs, and nearly half reported any influence by their partner.(25) A study of college-age women found that women who feel stability and intimacy within the relationship
and report communication and partner support are more likely to choose OCs as a method. (26, 27) Adolescents with a partner five or more years older (28) and women with multiple sex partners are less likely to use OCs consistently. (29) In addition, partner support and a partner's happiness about OC use are associated with more consistent use of OCs. (28, 30) Women who are in longer relationships are more likely to continue using OCs (27, 28) as are women who report frequent sex. (26, 27) The data available show that women are more likely to choose OCs and use them consistently and for a longer time when they are involved in relationships characterized by stability, intimacy and partner support. Most of the data on partner influence, however, are from studies of college-age men and women. Studies have also looked at OC use among African-American adolescents, but few studies have investigated use among other racial and ethnic groups.

Contraceptive patterns among Hispanics are poorly understood. In the US, Hispanics have higher fertility rates (31) and lower rates of contraceptive use than other groups. (1) Hispanic women are more likely than their counterparts to be involved in relationships of long duration, to have frequent sex and to be married or cohabiting with a partner. (27) And while Hispanic men and women are more likely to discuss contraception, they are less likely to use any method of contraception. (27, 32) Although no data report the effect of partner influence on Hispanics' use of OCs, evidence of partner influence from other groups of women supports the idea that partners of Hispanic women may play a role in OC use and discontinuation. One limitation of the existing data is that the term
Hispanics refers to an aggregate group that is ethnically, racially and culturally diverse. Grouping Hispanics into one category may not accurately explain contraceptive behavior.

The purpose of this study is to assess partner influence on OC discontinuation within two months in a predominantly Dominican-American population attending an urban family planning clinic. Partner and relationship variables found to be associated with contraceptive and OC use in previous studies were included in the baseline interview to answer the following question: What variables related to the partner and the relationship are associated with OC discontinuation in a predominantly Hispanic population of women initiating OCs?
II. Methods

Two-hundred and fifty women initiating OCs in an urban family planning clinic in New York were enrolled in a prospective study between April and September of 2000. Subjects were interviewed at the end of the clinic visit in either English or Spanish, depending on the subject’s preference. The baseline interview included variables related to demographics, clinic experience, reproductive history, OC history, fertility motivation, acculturation and partner influence. Language variables, duration of time in the US and frequency of trips to the country of origin were used to measure acculturation. Partner influence was assessed though questions of partner age, duration of relationship, cohabitation, future of the relationship, partner knowledge of the woman’s plan to use OCs, partner approval of OC use, satisfaction with the partner and partner’s fertility motivation.

All women initiating OCs, either as a new user or a return user, were eligible for the study. Women obtaining OC refills were excluded from the study. Fewer than 10% of the women eligible for the study refused to participate. Of the 250 women enrolled, 227 (91%) were successfully followed up with a telephone interview about six weeks after enrollment. A daily pill history was obtained through calendar recall as well as reasons for discontinuation. The outcome was discontinuation before initiating the second pack, that is, discontinuation before pill 29. Most studies of OC discontinuation have used discontinuation at six months or one year as the outcome with no assessment of the precise time at which discontinuation occurred. However, one study reported that most OC
discontinuation occurs within the first two months,(3) and thus discontinuation by the second pack was chosen as the outcome. In addition to partner influence on OC use, the timing of OC initiation was also an independent variable of interest. Some women were instructed to take the first pill in the clinic while others were instructed to take the first pill at another time, a protocol that was determined by the provider. The hypothesis was that taking the first pill in the clinic would increase continuation to the second pack.

Two-hundred and thirteen of the 229 women were included in the final analysis. Fourteen women reported that they discontinued OCs either because they became pregnant or desired pregnancy. Correlations among partner and relationship variables were evaluated to determine whether certain variables were measuring a similar characteristic. Variables that were significantly associated with discontinuation in a univariate analysis were entered into a multivariate analysis. Logistic regression was used to create a model of the variables that were independently associated with discontinuation of OCs. A survival analysis was performed to identify where in the 29 days of OC use discontinuation is most likely to occur. The SPSS 8.0 software package was used to analyze the data.
III. Results

The mean age and standard deviation of the subjects was 22.4 years (5.7) and ages ranged from 13 to 46. Forty-two percent of subjects were under 21 years of age. Of the subjects, 90% were Hispanic (80% of whom were of Dominican descent) and 10% were African-American, white, Asian or other. Over half had received either a high school diploma or GED, while fewer than half were employed. The 21 subjects who were lost to follow-up did not differ significantly from those who completed the study.

Baseline variables and their association with discontinuation are shown in Table 1. Lack of partner knowledge of the woman’s planned OC use was significantly associated with OC discontinuation (OR=3.52, 95%CI: 1.75, 7.06). Other partner and relationship variables such as partner age, duration of the relationship, living status, partner approval, satisfaction with partner and future of the relationship were not significantly associated with discontinuation.

The correlations among partner and relationship variables were evaluated using a chi-square statistic. Sixty-eight percent of the partners who desired a pregnancy within the next six months did not strongly approve of OC use versus 42% who did not desire a pregnancy within the next six months (p=0.001). Partner approval of OC use was also correlated with partner satisfaction as more women who were very satisfied reported that their partner strongly approved of OC use as compared to women who were not very satisfied (p=0.01). Living with a partner was correlated with a relationship ≥ 12 months duration, a relationship that would last forever and the partner desiring a pregnancy within the next six
months (p<0.05). Partner knowledge of planned OC use was correlated with relationship ≥ 12 months duration, living with the partner, partner’s strong approval of OC use, being very satisfied with the partner and a relationship that would last forever (p<0.01).

Demographic variables found to be significantly associated with discontinuation in the univariate analysis were age less than 21 years, no employment and fewer than twelve years education. However, after controlling for age, unemployment and education were not independently associated with discontinuation. Variables related to the clinic visit and OC history that were significantly associated with discontinuation included taking the first pill after leaving the clinic rather than in the clinic, receiving EC at enrollment and never having used OCs. After controlling for when the first pill was taken, receiving EC at enrollment was not significantly associated with discontinuation. Women who reported having sex less than one time per week, being uncertain about wanting to use OCs and planning to use OCs less than one year were more likely to discontinue by the second pack, as were women who reported that they would be happy if they became pregnant in the next six months. Reproductive history and acculturation variables were not associated with discontinuation.

Table 2 shows the results from the multivariate analysis. The multivariate models included the eight variables that were significantly associated with OC discontinuation in the univariate analysis. All eight variables were entered into a logistic regression model and four variables remained significant in this full model at p ≤ 0.05. Each of the insignificant variables was removed, one at a time, and
the final model included five variables significant at p < 0.05. After controlling for variables related to OC use in the regression model, the odds of OC discontinuation before the second pack among women who reported that their partner did not know of their planned OC use was 2.86 (1.28, 6.37). Taking the first pill after the clinic visit, happiness if pregnant in the next six months, younger age and intending to use OCs less than a year were also associated with significantly increased odds of discontinuation, after controlling for other variables.

Figure 1 shows the different rates of discontinuation within 29 days according to partner knowledge of planned OC use. Discontinuation was similar in both groups for the first week. Subsequent discontinuation occurred at similar points in time for both groups, days 7, 14, 21, 28 and 29, but more women whose partner did not know of planned OC use discontinued at each of those points than did women whose partners did know. While women whose partners did not know of planned OC use discontinued throughout the 29 days, women whose partners did know mostly discontinued within the first 14 days or at the beginning of the second pack. Figure 2 shows that the hazard rate, or instantaneous rate of discontinuation, calculated as the number of individuals discontinuing on that pill day divided by the number continuing on that pill day.(33) The hazard rate is greatest at days 0, 7, 14, 21, 28 and 29. That is, some women never started the OCs, others discontinued at week intervals and others discontinued after one full pack. Women whose partners did not know of planned OC use demonstrated a greater hazard of discontinuation at each of these points than did women whose
partners did know. The greatest hazard of discontinuation for both groups of women was at the beginning of the second pack. Both Figures 1 and 2 show that most discontinuation occurred at week intervals, and it is unclear whether women actually tend to discontinue at week intervals, or if there is tendency to report discontinuation by weeks.
IV. Discussion

Partner knowledge of planned OC use appears to be associated with continuation of OCs in this sample. It is unlikely that a woman discontinued OCs simply because her partner did not know of her decision to use OCs, but rather that partner knowledge was a marker for a type of relationship that was associated with continued OC use. Communication within a relationship has not been shown to be associated with OC use, but studies have reported an association between communication and general contraceptive use (27, 34, 35) and effective condom use (18, 36, 37). The reported association between communication and condom use may not be transferable to OC use, because while partner communication is necessary for condom use, OCs can be effectively used without such communication. However, because OC use requires a daily regimen of pill-taking, there may be more room for partner influence in OC use than with other highly effective methods such as Depo-Provera and IUD, methods that do not require daily adherence.

While partner knowledge may be in part explained by communication within the relationship, a lack of communication may not always lead to OC discontinuation. In a study of Indonesian women, Pariani et al. (38) found that discontinuation of a contraceptive method was less associated with partner agreement about the method than it was with whether the woman was granted the method she wished to use. With our data, a cross-tabular analysis of partner knowledge and partner approval revealed a significant correlation between the two variables (p<0.001). Seventy-two percent of women reporting that their
partner did not know of the planned OC use also reported that their partner would not strongly approve of OC use, compared to 41% of women who said their partner knew of the planned OC use and would not strongly approve. Partner knowledge, or the decision to tell a partner about planned OC use, may be dependent on whether the woman thinks he will approve or not. Telling an unsupportive partner about planned OC use may lead to OC discontinuation, whereas telling a partner who is supportive may lead to OC continuation. In fact, the data show that the effect of partner knowledge on OC continuation was much stronger among women who reported that their partner did not want them pregnant within the next six months (OR=4.44, 95%CI: 1.94-10.14) than among women who reported that their partner did want them pregnant within the next six months (OR=1.94, 95%CI: 0.61, 6.12).

Several studies have reported an association between OC discontinuation or inconsistent OC use and a relationship of short duration, infrequent sex and a partner who is five or more years older than the woman.(26-28) Although these variables were not found to be associated with OC discontinuation in this sample, relationship of short duration and infrequent sex were both highly correlated with partner knowledge of OC use (p=0.01, p=0.002, respectively) and may measure the level of intimacy and seriousness in the relationship. The association of OC inconsistency and a partner who is five or more years older was seen among adolescent women whereas the women in this study included women of all reproductive ages. However, when the data were limited to women under 18, there was a slightly increased risk of OC discontinuation when the partner was
five or more years older (OR=2.14, 95% CI: 0.51, 8.97), though the number of
women included was small and the 95% confidence interval crossed the null.
Living with a partner, duration of the relationship and the future of the relationship
were highly correlated and probably measure the seriousness of the relationship.
Partner knowledge also captured some element of the seriousness of the
relationship because it was also highly correlated with the above three variables.

One study reported that 50% of adolescents discontinued OCs at three
months,(39) and in this study, the odds of discontinuation was 1.10 (1.02, 1.20)
for each year younger in age. Several studies have reported that new users of
OCs were more likely to discontinue.(3, 6) Although prior use of OCs was not
related to OC discontinuation within the model for this study, ever use of OCs
was highly correlated with age, and therefore the univariate association with
discontinuation was an effect of age.

Fertility motivation, as measured by happiness if pregnant in the next six
months, was associated with OC discontinuation. Although all women in the
study received OCs from the clinic, forty-five percent reported that they would be
happy if they were to become pregnant in the next six months, possibly indicating
some ambivalence about avoiding pregnancy or using OCs. However, it does
not appear that there is ambivalence about OC use, as happiness if pregnant in
the next six months was neither associated with certainty of using OCs nor with
intended length of OC use. It was, however, associated with whether the partner
desired a pregnancy in the next six months. Seventy-one percent of women who
said that their partner desired a pregnancy in the next six months reported that
they would be happy if pregnant in the next six months, whereas only 34% of
women reporting that their partner did not want a pregnancy in the next six said
they would be happy with a pregnancy in the next six months (p<0.001).
Intended length of OC use less than one year was significantly associated with
discontinuation, and may serve as another measure of fertility motivation.

Lastly, women who did not take the first pill in the clinic were more likely to
discontinue OCs by the second pack than were women who did take the first pill
in the clinic. Of the 156 women who did not take the first pill in the clinic, seven
never started OCs. The effect of taking the first pill in the clinic was not limited to
ensuring that women start OCs, but appeared to extend throughout the 29 days
as women who did not take the first pill in the clinic had a 3.03 (1.19, 7.68)
increased odds of discontinuation. Although some clinicians start women on
OCs the day they come to the clinic, it is not standard protocol, and has not been
reported in any studies of OC discontinuation. Taking the first pill in the clinic
may have led to less confusion about how to take OCs and higher self-efficacy,
or the belief that one can perform a specific behavior.(14) Several studies have
reported that self-efficacy is associated with contraceptive use, but no studies
have reported specifically on OC use.

There are several limitations of this study. With a larger sample size, the
effect of partner influence on OC discontinuation could have been more fully
characterized. Variables such as partner approval of OC use and a relationship
that will last forever may have reached statistical significance with more subjects.
Partner knowledge was significantly associated with OC discontinuation by the
second pack, but it was only assessed in the baseline interview. It is possible that women who reported that their partner did not know of planned OC use later told their partner, a scenario that may have led to exposure misclassification and a bias away from the null. During the follow-up interview, women may have reported their daily pill use inaccurately. There is no reason, however, that the inaccurate pill reporting would have occurred differentially according to any of the independent variables. And lastly, it is important to acknowledge that information about partner influence was obtained from the woman and not from the partner himself. But although some of the partner information reported by the woman may have been inaccurate, the woman’s perception of her partner’s influence is likely to be a more important measure of the risk of OC discontinuation.

The results from this prospective study indicate that partner influence is associated with OC discontinuation, and specifically that partner knowledge of planned OC use is a significant predictor of continuation. The dynamic between a woman and her partner that is most important in determining OC discontinuation is unclear, however, as partner knowledge is likely measuring some aspect of the relationship that is associated with the likelihood of discontinuation. There is evidence that communication about OC use may only be associated with OC continuation in relationships where the partner is supportive. Further studies are needed to understand the interplay of partner support and communication within the relationship and its effect on OC discontinuation.
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| Fertility Motivation/Behavior        |        |        |        |        |
| Certainty of wanting to use pill     |        |        |        |        |
| Very certain of wanting to use pill  | 121    | 21     | 100    | 1.0    |
| Other (somewhat certain, uncertain)  | 92     | 27     | 65     | 1.98   |
|                                       |        |        |        | 1.03 – 3.79 |
| Intended length of pill use           |        |        |        |        |
| > 1 year                              | 116    | 19     | 97     | 1.0    |
| ≤ 1 year or as a bridge to another   | 93     | 29     | 64     | 2.31   |
|                                       |        |        |        | 1.20 – 4.47 |

<p>| Happiness if pregnant in next 6 months|        |        |        |        |
| Unhappy                               | 117    | 18     | 99     | 1.0    |
| Happy                                 | 96     | 30     | 66     | 2.50   |
|                                       |        |        |        | 1.29 – 4.85 |
| # children desired in future          |        |        |        |        |
| 0 children desired                    | 31     | 7      | 24     | 1.0    |
| 1+ children desired                   | 178    | 40     | 138    | 0.99   |
|                                       |        |        |        | 0.40 – 2.48 |
| Frequency of sexual intercourse       |        |        |        |        |
| &lt; 1 time per week                     | 76     | 24     | 52     | 1.0    |
| ≥ 1 time per week                     | 137    | 24     | 113    | 0.46   |
|                                       |        |        |        | 0.24 – 0.88 |
| # sexual partners in past year        |        |        |        |        |
| 1 partner                            | 156    | 30     | 126    | 1.0    |
| 2+ partners                          | 56     | 18     | 38     | 1.99   |
|                                       |        |        |        | 1.00 – 3.96 |
| Knows anyone who uses OCs             |        |        |        |        |
| Yes                                  | 146    | 32     | 114    | 1.0    |
| No                                   | 67     | 16     | 51     | 1.12   |
|                                       |        |        |        | 0.56 – 2.22 |
| Peers are happy with OCs              |        |        |        |        |
| Yes                                  | 113    | 23     | 90     | 1.0    |
| No (unhappy or mixed feelings)        | 30     | 8      | 22     | 1.42   |
|                                       |        |        |        | 0.56 – 3.61 |</p>
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*1 reported don’t know
*2 reported don’t know, 2 missing data
*3 reported don’t know, 1 missing data
*4 reported 0 partners in the last year
*5 reported “don’t know”
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† OR is the odds of discontinuation for each year younger
Figure 1. Association of OC discontinuation and partner knowledge of planned OC use

OC discontinuation according to partner knowledge of planned OC use

Day of OC use

Partner doesn't know
Partner does know

Figure 2. Association of OC discontinuation hazard and partner knowledge of planned OC use

Hazard of OC discontinuation according to partner knowledge of planned OC use

Day of OC use

Partner doesn't know
Partner does know
V. References


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