

FACTORS WHICH INFLUENCE USE OF PRENATAL CARE IN LOW-INCOME RACIAL- ETHNIC WOMEN IN LOS ANGELES COUNTY

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ABSTRACT: There is very limited information on ethnic differences in use of prenatal care services. The purpose of this study was to examine the effect of sociodemographic, health behaviors, medical risk, and psychosocial risk factors on the timing of prenatal care among Black-American, Mexican-American, and recent Mexican immigrant women in Los Angeles. A sample of 107 primiparous women were interviewed using a structured questionnaire. Information obtained included socioeconomic indicators, relationship with baby's father, timing of prenatal care, psychosocial factors, and substance use before pregnancy. Ethnic patterns of timing of prenatal care revealed no significant differences. The relationship with the baby's father was associated with early timing of prenatal care and more prenatal care visits. Substance use before pregnancy was significantly related to total number of visits for this pregnancy.

INTRODUCTION

Improved access to prenatal care represents a major pathway to improving the nation's health. This connection is reflected in a target set in 1980 by the United States Surgeon General. "In 1990 at least ninety percent of pregnant women in any racial or ethnic group will obtain prenatal care during the first trimester." Currently most, if not all, evidence suggests that among low-income and minority women only 50 percent initiate prenatal care in the first trimester while 80 percent of the general population initiate prenatal care in the first trimester.^{1,2}

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This study was supported by the following funding agencies: UCLA Center for the Study of Women, UCLA Biomedical Faculty Research Support Grant, UC Mexus Development (Grant DG87-123) and Agency for Health Care Policy and Research (formerly known as National Center for Health Services Research and Technology Assessment (HS/HD #05518-01A1)).

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Although there is overwhelming evidence that inadequate prenatal care contributes to unfavorable birth outcomes, there is more limited understanding of those factors which contribute to delayed prenatal care.

Several recent studies have suggested factors which contribute to delayed prenatal care and higher prevalence of unfavorable perinatal outcome in these groups.^{3,4} These include lack of financial resources and inadequate or no health insurance; high rates of preexisting chronic disease conditions; low maternal education; age; disrupted families and lack of social support; problems of transportation and child care⁵ and recent immigrant status combined with financial problems.^{6,7} Furthermore, past research strongly indicates that non-medical factors such as stressful life events, social support, and health behaviors, such as substance use, also appear to interact with population characteristics to influence timing of prenatal care.^{1,8,9} Yet, few studies have examined these issues among pregnant women of Mexican origin. Although Mexican origin women have more favorable birth outcomes than Black women, they have similar patterns of initiation of prenatal care as Black women.^{10,11}

Several studies on recent Mexican immigrant women have suggested that they are a population at reproductive health risk due to their sociodemographic characteristics, fear of using public health services due to the likelihood of detection or deportation,¹² and lack of health insurance.^{13,14} One study of recent Mexican immigrant women documented the delayed patterns of prenatal care in this group.¹⁵ Their findings revealed that 20 percent of Mexican immigrant women had received no prenatal care, while 40.5 percent had initiated prenatal care in the second or third trimester. In fact, undocumented immigrant pregnant women were three times more likely to deliver with no or late prenatal care. Norris and Williams³ also found that the highest crude and standardized perinatal mortality rates in California in 1978 were for non-Medi-Cal patients giving birth in county hospitals who had received late or no prenatal care. The authors suggest that this group may include a significant number of recent immigrant women.

Current trends show that the Latino immigrant population in California will increase by 50 percent in the next decade and triple by the end of the century.¹⁶ Thus, it is timely to examine the patterns of prenatal care in this group since projections suggest that births of Latino women will constitute 50 percent of all births in the state of California within the next decade.¹⁷ One aim of this exploratory study was to examine the effect of sociodemographic, health behaviors, medical risk, and psychosocial risk factors on the timing of prenatal care among

Black-American, Mexican-American, and recent Mexican immigrant women who use the Los Angeles county prenatal care clinics.

METHODS

Sample and Procedures

The data employed in this study were collected through face-to-face interviews in Los Angeles prenatal care clinics in 1988 with 107 pregnant, primiparous women, of whom 20 were Black-American, 21 Mexican-American, and 66 recent Mexican immigrant women. All respondents were between the ages of 18-34, born in United States, or for the Mexican-American group, had been born in Mexico and lived in the United States since the age of 10. Recent Mexican immigrants were eligible if they were born in Mexico and had resided in the United States for seven years or less.

All subjects were interviewed at prenatal care clinics using a structured questionnaire. The sampling procedure entailed a review of all medical charts prior to prenatal care clinic sessions to identify respondents eligible for the study. Eligibility criteria for inclusion in the study were ethnicity, parity (primiparous only), Medi-Cal or self-pay status, and educational level of 12 years or less. All subjects were interviewed by a trained interviewer with similar background characteristics to the respondent, namely, ethnicity and level of education. Interviews lasted approximately 40 minutes. In total, 112 women were approached and only five women refused to participate in the study.

Instrument

A structured interview was used to obtain information on socioeconomic indicators, whether the pregnancy was planned, relationship with the baby's father, initiation and use of prenatal care, substance use before pregnancy, and psychosocial factors. Three items were used to obtain data on how many weeks the woman was pregnant when she first obtained prenatal care, whether she obtained care as soon as she wanted, and the total number of prenatal care visits after she became pregnant, not including the visit for the pregnancy test. In addition, information on medical risk was obtained from the respondents medical chart at the clinic sites. High medical risk was defined as the presence of a chronic disease such as heart disease and pregnancy-induced problems such as gestational diabetes or hypertension.

Several items collected data on age, educational level, and health insurance coverage. Two items concerned the relationship with the baby's father: current living arrangement and frequency of contact. A three-point index was developed on the relationship with the baby's father. Respondents who currently lived with baby's father and saw him at least several times a month or

more (scored 3) were differentiated from those who were not living with baby's father but saw him several times a month or more (scored 2), and from those who were not living with baby's father and never saw him (scored 1).

Psychosocial factors were measured using multiple-item scales. A modified 16-item life events scale was used to assess whether or not life events such as "recent move, loss of home, problems at work, or unusual money worries" had occurred since the respondent became pregnant.¹⁸ Respondents were also asked how much life events as a whole bothered or upset them since they became pregnant. Responses were rated on a 5-point scale. Shortened versions of two social support scales (PSS-Fa and PSS-FR) developed by Procidano and Heller¹⁹ were used to measure perceived family and friend support. The scales had 10 and 13 items respectively. Items were scored on a three-point scale and averaged to create two indices. The Spielberger State Anxiety Inventory was used to measure level of anxiety.²⁰ This 20-item instrument was selected due to its brevity, simplicity, and cross-validation with Mexican origin populations and pregnant women.²¹

Substance-use behaviors were measured using a modified version of an instrument developed by the Human Population Laboratory.²² A series of questions on the use of alcohol, hard drugs, prescription drugs and over the counter medications were asked of all respondents to ascertain frequency of drinking behavior, and type and frequency of drugs used. Respondents were asked about their use of substances "three months before they became pregnant" and during pregnancy. However, only the data for the 3 months before pregnancy are reported in this paper.²³ The hard drugs category included cocaine, PCP, marijuana, and heroine. Prescription drugs included stimulants, tranquilizers, and prescribed drugs. Over-the-counter medications (OTC) included aspirin, medicine for indigestion, laxatives, or other medicines purchased without a prescription. All items were rated on a 6-point scale (1 = never to 6 = daily intake). A substance-use-before-pregnancy index was computed using the means for reported use of liquor, marijuana, hard drugs, over-the-counter medications and prescription drugs. The means were then summed for an index with a possible score which ranged from 5 to 30.

Analyses tested for differences in socio-demographic characteristics by ethnicity using chi-square tests and analysis of variance. Bivariate correlations were then conducted between the major study variables and the two prenatal care dependent measures. Finally, multivariate analyses using simultaneous multiple regressions were conducted.

RESULTS

Sample Characteristics

There were significant ethnic differences in socio-demographic characteristics among respondents on age, educational level, and

TABLE 1

Pregnancy-Related Characteristics of Respondents by Ethnicity

	<i>Total</i>	<i>Black</i>	<i>Mexican American</i>	<i>Mexican Immigrant</i>
Trimester of Initiation of Prenatal Care				
13 weeks or less	47.2%	45.0%	47.6%	49.0%
14 - 26 weeks	32.5%	35.0%	47.6%	35.0%
27 + weeks	10.3%	10.0%	4.8%	16.0%
Mean weeks	15.1	15.8	15.7	14.6
(S.D.)	(8.2)	(6.7)	(7.3)	(6.8)
Mean number of visits	5.0	5.2	4.3	5.1
(S.D.)	(3.9)	(5.0)	(2.2)	(4.0)
Obtained care as soon as wanted (yes)	70.0%	55.0%	61.9%	77.3%
High Medical Risk (Advised of Problems)	9.5%	10.0%	—	9.1%
High Medical Risk Group (Medical Chart)	17.1%**	50.0%	4.8%	11.0%
Planned Pregnancy (yes)	46.7%*	25.0%	52.4%	51.5%

*.05

**.001

whether living with baby's father. The overall characteristics of the sample reveal that, on average, respondents were 21.2 years of age (S.D. = 3.4) with a mean level of education of 9.1 years (S.D. = 2.6). Recent Mexican immigrants were significantly older than the Mexican Americans ($F(2,102) = 3.9$, S.D. = 3.4, $p < .05$) and had significantly lower levels of education than Mexican Americans ($M = 10.6$, S.D. = 1.6) and Blacks ($M = 11.4$, S.D. = .6) ($F(2,104) = 28.4$, S.D. = 2.6, $p < .001$). Black respondents were significantly more likely to have Medi-Cal (Chi square(2) = 31.8; $p < .001$). Mexican-American (76%) and recent Mexican immigrants (64%) were significantly more likely to be living with the baby's father than Black respondents (33%) (Chi square(2) = 10.1; $p < .01$).

Prenatal Care Variables

Table 1 presents the pregnancy-related characteristics of the sample by ethnic group. The average number of weeks for initiation of

prenatal care in the sample as a whole was 15.1. Less than 50 percent of the total sample initiated prenatal care in the first trimester (13 weeks or less). Overall, five prenatal care visits were reported for this pregnancy and respondents on average were 31 weeks pregnant at the time of interview. Interestingly, sixteen percent of Mexican immigrants initiated late prenatal care, yet 70 percent of this group reported that they "initiated care as soon as they wanted." Among the Black respondents, 10% initiated care late and 55 percent indicated they initiated care "as soon as they wanted." Among Mexican Americans only 5 percent initiated late prenatal care and 62 percent reported that they initiated care "as soon as they wanted." Among the Mexican-American and recent Mexican immigrant respondents, 52 percent reported they had planned the pregnancy, while 25 percent of Black respondents reported they had planned the pregnancy. This difference was statistically significant.

In regard to medical risk, about 9 percent of the recent Mexican immigrant respondents reported they were advised of medical problems or complications, and 11% of this group were so identified in the medical charts. For Black respondents, 10 percent reported they were advised of medical problems, yet 50% were identified in the medical charts as high risk. Among Mexican Americans, 5 percent were identified as high risk, and none reported they were advised of problems. Thus, Black women were significantly more likely to be at high medical risk than women of Mexican origin.

Psychosocial and Substance-Use Variables

There were no significant differences by ethnicity in level of anxiety, or perceived family and friend support. On number of life events, recent Mexican immigrants reported 4.1 mean events (S.D. = 2.6) since becoming pregnant, blacks reported 2.3 mean events (S.D. = 1.7) and Mexican-Americans reported 2.8 mean events (S.D. = 2.5). Recent Mexican immigrants experienced significantly more life events on average than Mexican-American or black women ($F(2,104) = 5.2$; S.D. = 2.5; $p < .01$), but these events were rated as significantly less upsetting overall by recent Mexican immigrants ($F(2,104) = 7.96$; $p < .001$). The global assessment of reported life events revealed that recent Mexican immigrants were the most likely to report that events did "not at all or rarely upset them" (77 percent), while approximately one half of the black respondents (55 percent) and 48% of the Mexican Ameri-

TABLE 2

Inter-Item Correlations of Independent Variables and Dependent Items

<i>Independent Variables</i>	<i>Dependent Variables</i>	
	<i>Weeks Initiation of Prenatal Care</i>	<i>Number of Visits During Pregnancy</i>
Maternal Education	-.07	-.09
Paternal Education	.01	-.07
Family Support Score	.02	.05
Friend Support Scale	-.03	-.07
Frequency of Contact with Baby's Father	.35***	-.13
Spielberger State Anxiety	-.05	.07
Life Events Scale	.10	.10
Have Medi-Cal (Yes)	.36	1.97*
Medical Risk (Yes)	-.61	1.43
Liquor Before	-.10	.33
Marijuana Before	-.03	.12
Hard Drugs Before	-.07	.42
Prescription Drugs Before	-.24**	.03
OTC Before	-.18*	.14

* .05

** .01

*** .001

cans reported this. Recent Mexican immigrants were least likely to report being "upset very much or extremely" by life events (8 percent), while close to one-third of black and Mexican-American women report this.

The overall frequency of reported use of wine by all respondents was approximately 25 percent. Slightly over one-third of recent Mexican immigrants, close to 30 percent of Mexican Americans, and 25 percent of blacks report use of beer. Use of liquor was least likely to be reported by recent Mexican immigrants (12.1 percent) and Mexican Americans (14.3 percent). Almost twice as many Black respondents report use of liquor (25 percent). Marijuana use was reported by 25 per-

cent of black respondents and 1.5% of recent Mexican immigrants. Only black respondents reported use of hard drugs (10 percent). Over-the-counter (OTC) medications were reported to be used by almost 50 percent of the black respondents, 31 percent of recent Mexican immigrants, and 21 percent of Mexican American respondents. Close to 70 percent of the black respondents and 24 percent of the recent Mexican immigrant respondents reported use of prescription drugs.

Correlational Analyses

Table 2 presents the correlations between major study variables and the two dependent measures. Maternal education and paternal education were negatively associated with number of visits during pregnancy. Frequency of contact with baby's father was significantly correlated with week of initiation of prenatal care but weakly correlated with total number of prenatal care visits during pregnancy ($p < .10$). In addition, women who lived with baby's father initiated prenatal care significantly earlier than women who did not ($t(105) = 4.2$; $p < .001$). Thus the relationship with the baby's father was associated with earlier initiation of prenatal care and more prenatal care visits on three of the four tests.

An additional set of analyses were conducted to assess the association of major study variables with the item on whether respondents "obtained prenatal care as soon as they wanted." The following variables were significantly related: Living with baby's father (Chi square (1) = 8.2; $p < .01$), frequency of contact with baby's father ($t(105) = 14.2$, $p < .001$), maternal education ($t(105) = -2.1$; $p < .05$), whether pregnancy was planned (Chi square (1) = 5.3; $p < .05$), and ratings of stressfulness of life events ($r = .21$; $p < .01$). Medical risk status showed a trend (Chi square (1) = 3.3; $p < .07$). Respondents living with the baby's father were more likely to have obtained prenatal care "as soon as they wanted" than those who were not living with the baby's father. Better educated women, low risk women, and women with planned pregnancies were more likely "to obtain care as soon as they wanted." The more life events were rated as upsetting, the less likely a woman was "to obtain care as soon as she wanted."

Multivariate Analysis

The independent variables in regression analyses were maternal and paternal educational level, substance use before pregnancy, the re-

TABLE 3

Multiple Regression of Independent Variables and Prenatal Care Predictors
(Standardized Beta's, T's, and Confidence Intervals)

<i>Independent Variables</i>	<i>Dependent Measures</i>	
	<i>Wks. Pregnant at First Visit</i>	<i>Total # of Visits for Preg.</i>
Ethnicity (Black vs. Mexican Origin)	.05 .40 (3.96, 5.96)	-.01 -.07 (2.67, 2.48)
Substance Use Before Pregnancy	-.20 -1.90 (2.31, .05)	.39 3.64** (.51, 1.73)
Relationship with Baby's Father	-.37 -3.5** (.34, 1.32)	-.01 -.10 (1.21, 1.10)
Maternal Education	-.05 -.46 (.91, .57)	-.17 -1.48 (.66, 1.00)
Paternal Education	-.01 -.12 (.34, .71)	-.06 -.55 (.44, .25)
F	3.8*	3.3*
Adjusted R ²	.14	.12

*p < .01

**p < .001

relationship with baby's father, ethnicity (in this case, a dummy variable of black respondents vs. Mexican-origin respondents), and planned vs. unplanned pregnancy. The two dependent measures were number of weeks when prenatal care was initiated and number of reported prenatal care visits since respondent became pregnant.

Table 3 presents the results of the multivariate analyses. The regression on weeks of initiation of prenatal care revealed that the most significant predictor was relationship with the baby's father. There was also a trend for substance use before pregnancy to be associated with

weeks initiation. The regression conducted on total number of prenatal care visits for the current pregnancy showed that the substance use before pregnancy was significantly related. The greater the use of substances, the higher the number of visits. Since use of prescription drugs and OTC medications was correlated significantly with number of prenatal care visits, it is possible that this relationship may be moderated by medical risk. However, point biserial correlations of medical risk with use of prescription drugs and OTC medications before pregnancy were not significant. Further chi-square analyses revealed that Blacks were significantly more likely to use OTC and prescription drugs than women of Mexican origin, but medical risk did not consistently differentiate the use of these drugs in any ethnic group. The total number of visits was also marginally correlated with maternal education ($r = -.15$; $p < .11$).

A further pair of regressions were conducted similar to those in Table 3 with ethnicity coded as recent Mexican immigrant versus Mexican American. The regression for weeks pregnant at first prenatal care visit was highly significant, ($F(5, 62) = 3.94$; $p < .001$). Relationship with baby's father was the only significant predictor of prenatal care initiation ($Beta = -.43$; $p < .001$), although both substance use before pregnancy and ethnicity (Mexican American vs. immigrant) were marginally significant.

DISCUSSION

This study explored several factors which influence weeks at initiation of prenatal care and number of prenatal care visits in a low-income ethnic minority population. Clearly, the relationship with the baby's father is an important factor in the initiation of prenatal care, and substance use appears to be an important factor in relation to number of visits. Both were associated with initiation of prenatal care after controlling for ethnicity, education, and whether the pregnancy was planned. Since Black women appeared to be less likely to live with baby's father and more likely to use substances, these factors may contribute to their delayed initiation of prenatal care.¹⁷ Maternal education and planned pregnancy were not consistently related to initiation of prenatal care after ethnicity was controlled, suggesting that these factors may be less important than the relationship with the baby's father and prepregnancy substance use. Furthermore, social support from family and friends was not associated with initiation of prenatal care nor was

level of anxiety or number of life events. The current results suggest that the baby's father is more critical for all three study groups in initiation of prenatal care than the women's social networks. Due to the small sample size, we cannot test interactions of these variables but such effects deserve attention. For example, it is possible that social support buffers the effects of stress differentially for different ethnic groups.^{24,25}

Past research has suggested the importance of educational level and prenatal care.¹⁰ These data do support the relationship of low education level to delayed initiation of prenatal care. For example, Mexican immigrant women, the least educated group, were more likely to initiate care in the third trimester of pregnancy than Black or Mexican-American respondents. In addition, patterns of delayed care are perhaps related to perceived barriers to access to care. Respondents' self-report that they initiated care "as soon as they wanted" suggest knowledge, attitudinal and structural factors which may contribute to delayed prenatal care. A notable number of all respondents, and especially recent Mexican immigrants, reported that they did not obtain care earlier due to lack of knowledge of where to obtain care, long waiting time for an appointment when desired, or lack of health insurance. It has been estimated that 40 percent of Latinos in California have no health insurance.¹¹ Thus, unequal access to health resources may partly account for this finding.

Interestingly, medical risk showed little relationship to initiation of prenatal care. Notable was the finding regarding Black women who were the most likely to be at high medical risk and the least likely to know their risk status (50% vs. 10%). This discrepancy does not seem attributable to education in that blacks were the most educated in the sample. One explanation which may account for this discrepant finding is the limited time available for health professionals to provide comprehensive risk assessments and communicate information to their patients regarding medical risk. These data suggest that communication between providers and black-American patients needs to be improved. This area requires further study.

These data point to a number of areas which deserve attention. First and foremost, individual characteristics of the respondents were not as powerful as expected in predicting initiation of prenatal care. Qualitative data on reasons for initiating care suggest that the availability of prenatal care services is an important determinant of initiation of prenatal care. Furthermore, services for low-income women need to assure comprehensive medical management, particularly in the areas of monitoring substance use and medical risk. Thus, prenatal care services

must focus on finding the balance between low-income pregnant women's individual needs and responsive medical management.

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