

## FELLOWSHIP FORUM

## Pregnancy Among American Indian Adolescents: Reactions and Prenatal Care

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**Purpose:** Adolescent childbearing is twice as common among Native Americans as among all US races combined. Despite this, little is written about the psychosocial context or prenatal care of pregnant Native American adolescents. The objective of this study was to explore the reactions and prenatal care of Navajo and Apache adolescents delivering infants at Shiprock Indian Hospital, New Mexico, between January and March 1991, and Whiteriver Indian Hospital, Arizona, between May and June 1991.

**Methods:** Of the 25 eligible adolescents aged 19 years and younger, 15 Navajo and 5 Apache participants were interviewed within 24 hours of delivery. The interview consisted of 121 questions divided into 5 areas: sociodemographics, personal and family reactions to the pregnancy, knowledge and attitudes toward prenatal care, barriers to care, and ways to improve access to care.

**Results:** The mean age was  $17.4 \pm 1.1$ , 6 were married, and 13 were primiparous. According to the Maternal Health Services Index, 5 adolescents received adequate, 13 intermediate, and 2 inadequate prenatal care. During the pregnancy, 3 adolescents used tobacco, 3 used alcohol, and none admitted to other drugs. Although only 1 adolescent planned the pregnancy, 15 were not using contraception when they became pregnant. In exploring reactions to the pregnancy, 13 adolescents were afraid to tell their families and 4 concealed the pregnancy until confronted. During the pregnancy, 7 adolescents described loneliness and 6 expressed suicidal ideation. Al-

though over half reported no barriers to obtaining prenatal care, barriers that were noted by the remainder included transportation, family problems, and missing school.

**Conclusion:** We conclude that pregnancy among many American Indian adolescents is unplanned and characterized by uncertainty and fear of disclosure, resembling the reactions to pregnancy of other adolescent populations. Furthermore, despite universal access to health services, many American Indian adolescents continue to experience barriers to care and receive intermediate or inadequate prenatal care. These preliminary findings suggest further research may help clarify how adolescent reactions to pregnancy and knowledge of prenatal care affect health care utilization.

## KEY WORDS:

Adolescent pregnancy  
Native American  
American Indian  
Prenatal care

Native American adolescents have an increased incidence of high-risk behaviors such as pregnancy, childbearing, school dropout, alcohol abuse, substance abuse, and mental health problems such as depression, suicide, anxiety, low self-esteem, alienation, and running away (1-4). Less is known about pregnancy-related behaviors and attitudes among Native American adolescents than about other high-risk issues such as suicidal behavior or substance abuse. There is a nearly twofold difference in the rate of childbearing between Native American adolescents and adolescents of all other races combined (5). Of the 127,062 total births to Native American women reported to the Indian Health Service (IHS)

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from 1986 to 1988, 19.0% were to women under 20 years of age, compared to 12.5% for women of all races in the US. Among Native American mothers, 41.9% were under age 20 when they had their first child, compared to 23.3% for mothers of all races in the US (5).

Given the paucity of available information, the objective of this study was to explore the attitudes toward pregnancy and prenatal care among southwestern American Indian adolescent mothers. The goal was to generate hypotheses about links between health behavior during pregnancy and tribal, family, or health-service features.

## Methods

### Study Sample

The study population consisted of American Indian women aged 19 years and younger who delivered infants at Shiprock Public Health Service (PHS) Indian Hospital between January 27 and March 18, 1991 and Whiteriver PHS Indian Hospital between May 1 and June 28, 1991.

The Indian Health Service (IHS) is divided into 12 area offices, each of which supervises the hospitals and outpatient facilities in its region. Shiprock PHS Indian Hospital, located in the northwestern corner of New Mexico, primarily serves the Navajo Reservation and is a service unit of the Navajo Area Office. The hospital has family practitioners, obstetricians, and clinical nurse midwives providing prenatal and obstetrical care. It has Cesarean section capability and a level 1 nursery. A number of adolescent health care services (including prenatal care) are available at a community-based site called the Teen Life Center and a school-based clinic at Shiprock High School. Several outlying clinics also provide prenatal care to American Indians (primarily Navajo). Patients are referred to Shiprock Hospital from these clinics for labor and delivery. Under certain circumstances, obstetrical services may be contracted to non-IHS hospitals in the area.

Whiteriver PHS Indian Hospital, located in southeastern Arizona, primarily serves the White Mountain Apache Reservation and is a service unit of the Phoenix Area Office. The hospital has family practitioners, physicians' assistants, and a clinical nurse practitioner who provide prenatal care. Both the physicians and the midwife provide all the obstetrical services. Whiteriver Hospital does not have the capability for performing Cesarean sections; therefore, all high risk pregnancies are referred to

other IHS hospitals (Phoenix Indian Hospital) or contracted to non-IHS sites. Prenatal care is also provided at the IHS outpatient Cibecue Clinic. Adolescent health care services are available at a school-based clinic at Alchesay High School. In January, 1991, the White Mountain Apache Tribe established a mobile van unit staffed by a clinical nurse midwife to provide prenatal care in addition to other health care screening (blood pressure, blood glucose, etc.). One of the factors addressed by this "Mothers Too" mobile van project is the geographic isolation caused by the large area (75 mile by 435 mile) served by the Whiteriver Service Unit. An important part of these outreach efforts is the coordination of prenatal care, education, and enrollment in the nutritional support program for women, infants and children (WIC).

### Data Collection

Eligible patients were asked to participate in a study designed to explore the experience of Native American adolescents during pregnancy. The study was reviewed and approved by the Indian Health Service Area Research and Publications Committees and by the Institutional Review Board of the University of Pennsylvania. Signed informed consent was obtained from the adolescent, and a convenient time for the bedside interview was arranged. All interviews were conducted within 24 hours of delivery by a single investigator (L.L.) who was unaware of the mothers' prenatal histories. The interview was conducted in English (all adolescents were fluent) and required about one hour.

A structured format was used to minimize variability among the interview sessions. The interview instrument was a modification of the questionnaire designed by Kinsman and Slap (6). It consisted of 121 questions divided into the following areas: sociodemographics, personal and family reactions to the pregnancy, knowledge and attitudes toward prenatal care, barriers to care, and ways to improve adolescent access to prenatal care.

Since utilization of preventive health services may be affected by cultural beliefs, adolescents were asked about their involvement in tribal customs and ceremonies. The puberty ceremony was used as a marker of involvement. The Navajo *kinaalda* and the Apache *sunrise ceremony* are two- to three-day pubertal rituals that are held soon after menarche. The activities of these ceremonies represent the ideals that the adolescent should embody as she becomes an adult woman (7,8).

Following the interview with the adolescent, her medical record was reviewed for obstetrical and medical history, prenatal complications, peripartum events, and infant characteristics. Information about the onset, site, and number of prenatal visits were recorded.

### Statistical Analysis

The subjects' responses were reviewed and then divided according to their tribal affiliation. The groups were compared on each item using chi-square analysis for interval variables with Yates' correction, Fisher's exact test for dichotomous variables, Mann-Whitney U test for ranked variables, and the Student's *t*-test and analysis of variance for continuous variables. The Newman Keuls and Bonferroni procedures were used to correct for multiple comparisons.

### Results

Of the twenty-five American Indian adolescents who delivered infants during the study period, fifteen were patients at Shiprock Indian Hospital and ten at Whiteriver Indian Hospital. Twenty-two of the twenty-five adolescents agreed to participate in the study. The tribal breakdown was as follows: 15 Navajo (68%), 5 Apache (23%), 1 Ute (4%), and 1 Maidu (4%). Because the Ute and Maidu adolescents were not originally from the Navajo or Apache reservations and differed in their cultural beliefs, they were not included in the analysis. When the study sample was divided by hospital site (Shiprock vs Whiteriver), there were no statistically significant differences between the groups according to variables discussed below.

The sociodemographic characteristics of the sample are shown in Table 1. There were no significant differences between the Navajo and Apache subjects, although the Apache youth tended to be older, in a higher school grade, and more likely to be living with parents. Three Navajo and two Apache teens had had puberty ceremonies. The majority of Navajo adolescents had no knowledge of the *kin-aalda*; Apache youth were more familiar with the sunrise ceremony. The adolescents who had puberty ceremonies did not differ significantly from the others in prenatal care.

The prenatal care characteristics of the adolescent mothers are given in Table 2. The majority of respondents obtained prenatal care at IHS hospitals or clinics (70%). The Maternal Health Services Index,

**Table 1.** Sociodemographic Characteristics of Pregnant Adolescent American Indians

	Navajo (n = 15)	Apache (n = 5)
Mean age $\pm$ SD (years)	17.1 $\pm$ 1.2	18.0 $\pm$ 0.7
Mean Hollingshead occupational score $\pm$ SD <sup>a</sup>	1.8 $\pm$ 1.7	2.6 $\pm$ 1.6
Unmarried	11	3
Living with one or both parents	8	4
Mean school grade $\pm$ SD	10.3 $\pm$ 1.3	11.3 $\pm$ 0.9
Mean number of weeks out of school $\pm$ SD	33.2 $\pm$ 44.7	66.3 $\pm$ 71.6
Dropped out of school	5	1
Graduated high school/GED	1	3
Moved residence	8	2
Puberty ceremony	3	2

<sup>a</sup>Hollingshead occupational score ranges from 1 (unemployed) to 9.

developed by Kessner in 1973, was used to assess the adequacy of their prenatal care (9). The Index uses the time of the first prenatal visit and the total number of visits, adjusting for the length of gestation. According to the Index, five adolescents received adequate care, thirteen received intermediate care, and two received inadequate prenatal care. All of the Navajo subjects received either adequate or intermediate care. Apache respondents were more likely than Navajo to have received inadequate prenatal care (40% vs 0%; *P* = 0.013).

The prenatal histories are given in Table 3. Thirteen adolescents were primiparous. Most were not using contraception prior to this pregnancy. Only one adolescent stated that her pregnancy was planned. The characteristics of the infants born to Navajo and Apache mothers did not differ and were not associated with prenatal care. The mean gestational ages at delivery were 38.9  $\pm$  2.3 and 38.0  $\pm$

**Table 2.** Prenatal Care Characteristics

	Navajo (n = 15)	Apache (n = 5)
Prenatal care site		
IHS hospital or clinic	11	3
IHS school-based clinic	4	1
Other	0	1
Mean number of visits $\pm$ SD	8.1 $\pm$ 4.0	6.4 $\pm$ 4.3
Mean gestational age at first visit $\pm$ SD	17.2 $\pm$ 5.4	21.2 $\pm$ 10.3
Prenatal care <sup>a,b</sup>		
Adequate	3	2
Intermediate	12	1
Inadequate	0	2

<sup>a</sup>Determined by Maternal Health Services Index (12).

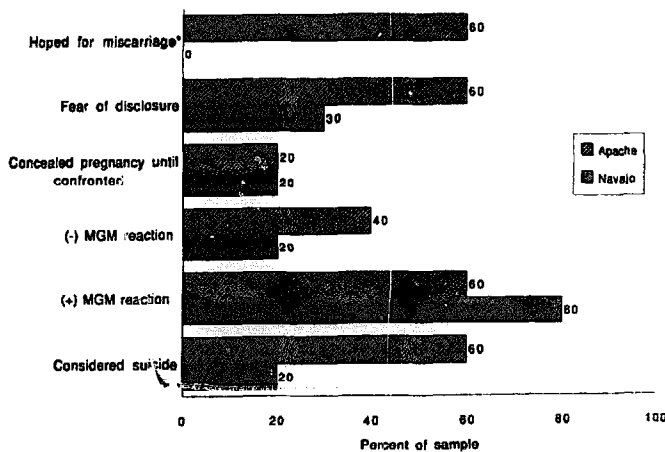
<sup>b</sup>*p* < 0.05 for Navajo vs Apache by chi-square analysis.

**Table 3. Prenatal history**

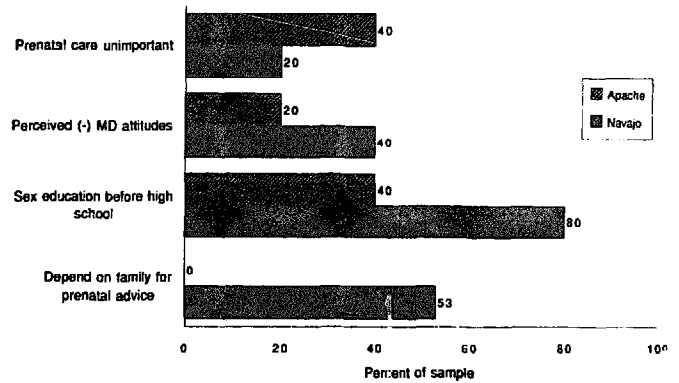
	Navajo (n = 15)	Apache (n = 5)
Previous pregnancies	4	3
Previous deliveries	4	3
Previous abortions	0	1
Used contraception prior to this pregnancy		
None	10	5
Oral contraceptives	2	0
Condoms	2	0
Mixed methods	1	0
Substance use during pregnancy		
Tobacco	2	1
Alcohol	2	1
Other substances	0	0
Problems during pregnancy		
Sexually transmitted disease	0	1
Urinary tract infection	4	0
Hypertension	3	0
Anemia	2	2

1.2, respectively. One set of Navajo twins was preterm ( $\leq 37$  wks) and  $< 2500$  gms. The mean five-minute Apgar scores were  $8.9 \pm 1.0$  for Navajo infants and  $9.0 \pm 0.0$  for Apache infants. Since Whiteriver Hospital referred all high-risk deliveries to other sites, there were no Cesarean section deliveries at Whiteriver, compared to three at Shiprock. These were performed because of preterm twins in a transverse-transverse lie, fetal distress, and pre-eclampsia. The only infants requiring neonatal intensive care were the two preterm twins.

The reactions of Apache and Navajo adolescents to their pregnancies did not differ significantly (Figure 1). When they learned that they were pregnant—thirteen adolescents were afraid to tell their families, eight wanted to conceal the pregnancy, and four concealed it until confronted. Five adolescents



**Figure 1. Reactions to pregnancy.**

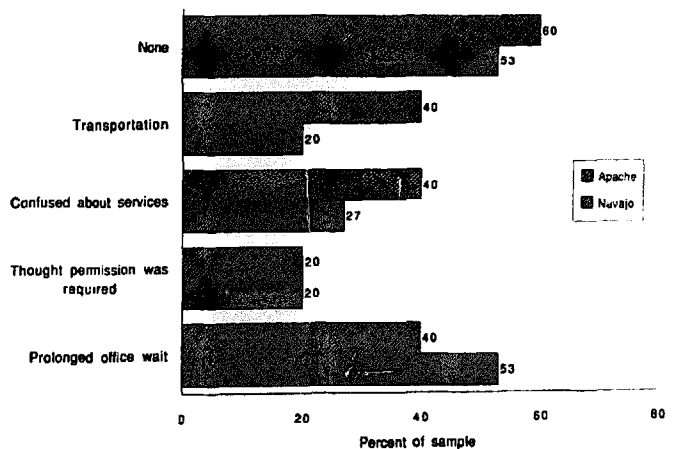


**Figure 2. Attitudes toward prenatal care.**

reported that their mothers were unhappy about the pregnancy. During the pregnancy, seven adolescents described loneliness and six expressed suicidal ideation. None of the adolescents who expressed suicidal ideation attempted suicide. Of the three adolescents who hoped for miscarriage, all expressed suicidal ideation.

To better understand the factors associated with suicidal ideation during pregnancy, the suicidal and non-suicidal youth were compared on all items. Suicidal youth were more likely @  $P < 0.05$  to hope for miscarriage (50% vs. 0%), fear disclosure (83% vs. 21%), express loneliness (83% vs. 14%), and view prenatal care as unimportant (57% vs. 7%).

The majority of adolescents understood the importance of prenatal care in the first trimester (Figure 2), although there were four who believed that care should begin in the second trimester. Although all of the adolescents stated that they liked their doctors, seven perceived negative attitudes of physicians toward pregnant adolescents and nine perceived negative attitudes toward sexually active adolescents. Sex education was taught to 70% of the



**Figure 3. Barriers to prenatal care.**

adolescents in middle school and 15% in high school. Three adolescents stated that they never received sex education in school. More Apache adolescents reported that they had received no or later sex education, and they were less likely to have been taught about the importance of health care during pregnancy by family members ( $P = 0.035$ ).

Over half the adolescents reported no barriers to obtaining prenatal care (Figure 3). (The major barriers noted by the remaining adolescents related to transportation (20%), family problems (10%), missing school (5%), or stress (5%). Despite the availability of IHS clinic sites and financial coverage for health care, six adolescents were confused about service availability, three about how to pay for care, and half believed that the wait at the physician's office was too long.

Adolescent mothers were asked to provide suggestions to improve prenatal care. Nearly all (95%) supported school-based clinics or clinics near the schools. Interestingly, however, only four of seven Navajo and one of two Apache adolescents chose to use the available school-based clinics. Reasons for not using the school-based clinics included embarrassment, lack of awareness of the service, and having dropped out of high school. Availability of transportation from school to prenatal care was also supported by 95% of the adolescents. Education about the importance of prenatal care for all students was unanimously supported by the adolescent mothers, and they suggested that it begin in eighth grade.

### Discussion

Few data exist concerning the reactions to adolescent pregnancy among American Indian youth. The objective of this study was to explore the attitudes of American Indian adolescent mothers and their families to pregnancy and prenatal care. The adolescents in our sample were less likely to receive adequate prenatal care than expected from both national and Native American statistics. Only twenty-five percent of the American Indian adolescents had received first trimester care, compared to 53% of pregnant 15–19-year-olds in the US (11), 42% of 15–17-year-old Native Americans, and 47% of 18–19-year-old Native Americans (4). The adolescents sampled were more likely than all 15- to 19-year-olds to receive intermediate care (65% vs 34%) and about as likely to receive inadequate care (10% vs 9%) (11).

The sociodemographic profile of the adolescents interviewed in this study suggests a population at high risk for future social and medical problems. These young women came from low-income families. Thirty percent were school dropouts, higher than the 12.6% nationwide figure for all U.S. individuals aged 16–24 years (10). Fifty percent of the adolescents moved residence at least once during the pregnancy, reflecting instability of their living situations. The percentage of adolescents reporting cigarette and alcohol use in this study were similar to reports about other Native American adolescents. Blum et al reported that 18% of 11th grade females smoked cigarettes daily and 12.2% used alcohol at least weekly (3).

The reactions to pregnancy expressed by the American Indian, rural adolescents in this study were similar to those of African-American, urban adolescents reported by Kinsman and Slap (6). Fear of disclosure was reported by 40% of the American Indian and 44% of the African-American adolescents. Twenty percent of this sample of American Indian adolescents concealed their pregnancy until confronted by a family member or friend. Though most were afraid to tell their families about the pregnancy, the reactions from mothers and boyfriends (or husbands) were mostly positive.

Native Americans are guaranteed health care through IHS and are subsequently free from economic barriers to care. Nevertheless, forty-five percent of adolescents surveyed did perceive barriers, most citing transportation, missing school, and family problems. The school-based clinics and the mobile van unit were specifically designed to overcome such barriers as distance and school absenteeism; however, they were apparently unsuccessful given the high drop-out rate and lack of familiarity with services. In addition, four out of nine adolescents who had school-based clinics available cited embarrassment as the primary reason for not utilizing them. This is consistent with a recent study of high school students, of whom 51% felt school-based clinics were the least private place to go compared to a physician's office, adolescent clinic, or emergency department (12). Furthermore, the American Indian adolescents themselves endorsed provision of transportation, clinics closer to the school, and school-based clinics as ways to improve prenatal care.

The results of this study suggest that although childbearing among Southwestern American Indian adolescents may be common and generally accepted by adult family members, these young mothers ex-

adolescents may be common and generally accepted by adult family members, these young mothers experience significant emotional distress. The high rate of suicidal ideation among these young women is especially concerning given the high rates of suicidal behavior among Native American adolescents (3,4). Blum et al found that Native American adolescents at high risk for suicide were more likely to frequently abuse substances, to have had intercourse, and to have been involved in a pregnancy (3).

There were important limitations to this study which should be considered in the interpretation of the results. The sample size was small, limiting the statistical power of the analyses. Even for the purpose of description, the results should not be generalized to all Navajo or Apache adolescents or, because of differences in culture and health services, to those of other tribes. Instead, the study is a preliminary examination of some major issues confronting these adolescent mothers. In addition, because Whiteriver Hospital did not have Cesarean section capabilities, all high-risk pregnancies were transferred to alternate (often non-IHS) hospitals. It is possible that those high-risk mothers differed in their feelings about pregnancy or prenatal care. Finally, this study is limited by its retrospective design. The data were collected within 24 hours of delivery, at a time when adolescent mothers may have been unwilling or unable to recall their feelings in early pregnancy. It is possible that these may have changed significantly over the course of the pregnancy. Although a prospective study design is preferable, it would bias the sample towards those adolescents who recognize their pregnancy early and seek early prenatal care.

We conclude that pregnancy among these American Indian adolescents often was unplanned and characterized by uncertainty and fear of disclosure. Given the psychosocial risks for pregnant American Indian adolescents and the unique health care system available to them, further research with this population may help design programs or direct educational efforts to improve their health care access and utilization. Possible directions for research suggested by these preliminary data include looking at suicidal behavior in pregnant adolescents, identify-

ing barriers to care in specific services, and elucidating cultural perceptions about the importance of prenatal care. In addition, future cross-cultural research may help clarify how adolescent reactions to pregnancy and knowledge of prenatal care and available services affect their utilization of the health care system.

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