Attendance at Prenatal Care

by

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Chapter I

In the United States, the percent of women with no prenatal care or care beginning in the third trimester decreased steadily to a low of 5.1% in 1980. Since 1980 it has steadily increased. In 1985 5.7% of all births in the United States were to women who began prenatal care in the third trimester or had no care (Bureau of the Census, 1988). In Black women the current rate is 10% and in Hispanics, 12.5% (Bureau of the Census, 1988).

The purpose of this study was to determine what barriers women identified that prevented them from obtaining adequate prenatal care. This is significant because early and regular attendance at prenatal care has been associated with improved pregnancy outcomes, particularly with a lower incidence of prematurity and low birthweight (LBW) (Chamberlain, 1976; Donaldson & Billy, 1984; Mundinger, 1985; Institute of Medicine, Committee to Reduce Low Birthweight, 1985). It has also been shown that women with no prenatal care are three times as likely to have a LBW infant (Mundinger, 1985).

The definition of LBW is an infant that weighs 2,500 grams or less at birth and is the single most important factor associated with infant morbidity and

mortality (Institute of Medicine, 1985). Infants with low birthweights are almost forty times as likely to die during the first four weeks of life than normal birthweight infants. They also are more likely to die in the first year of life and have more chronic problems (Institute of Medicine, 1985).

In an analysis of data from six countries representing a range of development levels (Chile, Egypt, Honduras, Singapore, Sweden and Thailand) Donaldson & Billy (1984) found that the number of prenatal visits is positively related to birthweight. The Institute of Medicine (1985) reviewed a number of studies aimed at determining the role of prenatal care in the prevention of low birthweight. All the studies showed that prenatal care exerts a positive effect on birthweight and that, "prenatal care is most effective in reducing the chance of low birthweight among high-risk women, whether the risk derives from medical factors, sociodemographic factors, or both (p.19)." Ryan, Sweeney & Solola (1980) in a survey matching number of prenatal visits to pregnancy outcome found a significantly greater incidence of low birthweight, stillbirths and neonatal mortality in women with 0-3 prenatal visits than in women with 4 or more visits.

Spending money to provide prenatal care not only saves lives; it saves money as well. This is because prenatal care can deter the costs of caring for and rehabilitating a premature or LBW infant. The Children's Defense Fund reports, "Comprehensive prenatal care cost $600 per mother while neonatal intensive care for a LBW baby averages more than $1,000 a day (p.xi)." The estimated first-year costs alone for the care of LBW infants born between 1978 and 1990 which could have been prevented by prenatal care is $ 2.5 billion dollars (Children's Defense Fund, 1988). Five million dollars would provide prenatal care for these women (Report of the National Commission to Prevent Infant Mortality, 1988). The American Academy of Pediatrics (1984) reported that the cost benefit of prenatal care ranged from two to ten dollars saved for every dollar spent on prenatal care.

Associations between certain components of prenatal care and increased birthweight show that the quality of the care received was as important, if not more so, than number of prenatal care visits attained. The American Nurses' Association Report on Access to Prenatal Care (1987) identified the following components of prenatal care as the most effective in reducing the incidence of low birthweight: (a) initial

and ongoing risk assessment, (b) individualized care based on case management, (c) nutrition counseling, (d) education to reduce or eliminate unhealthful habits, (e) stress reduction, (f) social support services, and (g) health education.

The OB Access Pilot Project (1984) studied the impact of a comprehensive package of prenatal care. The onset of care was recorded and it was determined whether a complete or incomplete package of care was received. Women who received the complete package which consisted of a minimum of eight visits, appropriate laboratory work, child birth education, individualized psychosocial and health education assessments and care plans, had a low birthweight rate of 3.0 percent compared to 7.0 percent in the control group.

Like the above study, Sokol, Woolf, Rosen & Weingarden (1980) studied the pregnancy outcomes of women receiving a comprehensive package of care through the Maternity and Infant Care Project at Cleveland Metropolitan General Hospital. The components of the prenatal care package are similar to those previously mentioned: patient education, nutrition counseling, social service assessment and intervention, special services for adolescents and delinquent appointment follow-up. Women receiving the total package had a

significantly lower incidence of premature births and low birthweight infants than the group not receiving the total care package.

In efforts to decrease preterm births, a prenatal program was developed which combined the components of risk screening, education regarding symptoms of preterm labor, limitation of activity, open communication with the provider, psychosocial support, and staff training combined with appropriate medical interventions as opposed to medical intervention alone. This program resulted in a decrease in preterm delivery from 6.75 percent to 2.40 percent in one year (Herron, Katz & Creasy; 1982).

It is apparent that comprehensive prenatal care is the most effective means of preventing LBW. Unfortunately many women have no prenatal care at all, attend sporadically, or begin care in the third trimester. It is estimated that nationally 20% - 25% of all pregnant women and a greater proportion of minority women fail to receive an adequate number of prenatal care visits (Miller; 1987). Latest figures for the State of Oregon show that 3,335 births in 1987 were to women who had an inadequate number of prenatal care visits, a rate of 86.2 per thousand (Oregon Dept. Of Human Resources Vital Statistics Data, 1988).

Certain financial and non-financial barriers have been implicated in the failure of some pregnant women to receive an adequate number of prenatal care visits. These barriers, and the differences between women with inadequate and adequate number of visits, were the focus of this study.

This study identified women with inadequate, intermediate and adequate amounts of prenatal care in a recently delivered sample of women in Portland, Oregon. These groups were interviewed in order to discover which variables, if any contributed or detracted from attendance at prenatal care. Those women with adequate attendance, who experienced barriers to attendance were asked how these barriers were overcome.

Nursing as defined by the American Nurses' Association is, "Diagnosis and treatment of human responses to actual or potential health problems (p.11)." Nursing emphasizes health maintenance and disease prevention. The information from this study could be used to propose recommendations to increase attendance at prenatal care by women with the potential for poor attendance. For those nurses involved with maternity services, this information would also be helpful in planning for sensitive, client-centered

prenatal care which could better serve the needs of these women as well as all pregnant women.

Review of the Literature

This review focuses on studies which examined barriers women encounter to initiating and/or staying in prenatal care, and the sociodemographic characteristics of these women. There was a notable lack of studies on women who managed to attend prenatal care in spite of encountering barriers.

Barriers to prenatal care

Slatin (1967) interviewed 64 of a total of 85 women who delivered at the University of Nebraska Hospital between August 1965 and August 1966 with no prenatal care in order to learn their reasons for not receiving care. At that time the reasons given for no prenatal care were: no reason (19), childcare (9), financial (8), conflict with work (6) new to community (6), transportation (3), fear (3), and other (10). To combat these problems a Maternal and Infant Care Project was instituted which provided, at no cost, all medical and dental services, transportation and childcare and comprehensive assistance from nutritionists, social workers and public health nurses.

Between June and October 1969 a second interview

was conducted to determine what impact, if any, the Maternal Infant Care Project had made on attendance (Slatin, 1971). Sixteen women were interviewed out of a total of 18 with no prenatal care, a significant decline from the number with no prenatal care at the time of the first interview. The reasons for not attending in the second sample were: new to community (6), no reason (5), fear (2) and other (3). Slatin was pleased with the results which showed a total reduction in the number of women with inadequate attendance as well as no respondents who cited financial, transportation or childcare as reasons for not attending.

A need for more advertising in the community was recognized by Slatin as a possible solution for those women who cited "new to community." Those who responded with fear may be helped by education and sensitive providers and those who responded with no reason or other may reflect an irreducible minimum. No sociodemographic data regarding the studies' samples were provided.

Klein (1971) compared the data of 978 women with no prenatal care who delivered an infant at Grady Memorial Hospital, Atlanta, Georgia between July 1, 1968, and July 31, 1969, to the data on 1,000 women who

had prenatal care and delivered during the same period. Her purpose was to identify factors which may contribute to maternal, fetal and infant deaths among a population of women with no prenatal care in order to provide care to meet the needs of these women.

A woman was considered as having had prenatal care if she had one or more visits which included medical history, physical examination and laboratory tests. This definition considered women with one visit on an equal base as those with 10 or more visits. In other words those with an inadequate number of visits were included in the sample identified as having had prenatal care. The inclusion of women with an inadequate number of visits in the sample with prenatal care may have maximized the findings but reduced their significance.

The women with no prenatal care were interviewed on admission to labor while the control group was interviewed in the prenatal clinic. There was no information as to what point in pregnancy the control group was interviewed. Medical and obstetric data were obtained from the charts. Data were tabulated according to registered and nonregistered patients, subdivided by race and further subdivided by parity.

The data showed that maternal mortality, perinatal mortality and prematurity were all higher in the group with no prenatal care. The maternal mortality rate was 9.3 per 10,000 births in the group with prenatal care and 33.1 per 10,000 births in the group without care.

Perinatal mortality rate was 27.3 per 1,000 with prenatal care, 131.9 per 1,000 without prenatal care. Forty-six percent of perinatal deaths occurred in women with no prenatal care. The premature birth rate was 23.4% for those with no prenatal care (20.1% white patients, 24.4% black patients); in those with prenatal care the premature birth rate was 15.3% (13.5% white patients and 15.6% black patients).

The group without prenatal care was more likely to be black, although the percent of white women in the no care group was higher when considering the total white population of Atlanta. Those without prenatal care were more apt to be multigravid (70.5%), single (54%), have a family size of four or more members (80%), be of very low income, have less education, be older, not use birth control and not return for postpartum care. Sixty percent of nonregistered patients failed to return compared to 10% of registered patients.

The nonregistered patients gave the following reasons for not attending prenatal care: lack of

childcare (21%), the time required (44%), transportation (16%), employment (13%), family responsibility (21%), and lack of finances (37%). If one assumes that there were time problems for those who listed family responsibilities and/or for those who listed work, the time factor is raised to 78%. A woman who has multiple responsibilities to work and family and cannot find time for prenatal care may be describing a lack of social support which has been mentioned in a current study (Poland, 1987) as a reason for lack of prenatal care.

Those who listed work as a factor may also be describing lack of available appointments to accommodate a work schedule. Klein did not elaborate on these points in her conclusions or her recommendations.

Klein concluded that women not receiving prenatal care had too many socioeconomic problems to engage in preventive health practices. Her recommendations called for both medical and comprehensive social services to be offered at the same site in order to facilitate the process of obtaining needed care. Specifically, she recommended increased sex, health and contraceptive information and increased financial assistance to needy women.

These recommendations do not specifically address the women's reasons for not obtaining prenatal care, i.e., lack of childcare, time, transportation, employment and family responsibility. Money was addressed but no concrete solutions to the financial problems of these women were made.

Klein's inclusion of women with 1-3 prenatal care visits in the group with prenatal care is a problem. This number is considered inadequate. Unfavorable outcomes have been noted in women with 0-3 visits as compared with those with 4 or more visits (Ryan, Sweeney & Solala, 1980). Had Klein controlled for this, listed outcomes may have been far worse than reported and differences between the groups more dramatic.

The fact that nonregistered women were interviewed in labor during a time of stress, and registered women in the prenatal clinic during a relatively non-stressful time, may have also confounded the results. Although the sample was one of convenience and its conclusions cannot be generalized to the total population of women not attending prenatal care, similar results have been found in other studies.

Bruce, Petrie, Chao, Williams & Imaizumi (1979) conducted a study to determine reasons why patients did not seek antepartum care at the Sloane Hospital, a

regional perinatal center in Manhattan, and to explore the problems which the lack of antepartum care caused. Between January 1, 1975 and December 31, 1977, 8,366 women gave birth at the Sloane Hospital to infants weighing 1,000 grams or more. Of these, 542 were not registered with the Sloane Hospital's antenatal clinic; 222 had received no prenatal care and the remaining 320 had made at least one visit someplace else but arrived in labor with no medical chart. The charts of those with no prenatal care were compared to those with some prenatal care occurring elsewhere, and both these groups were compared to the total delivering population. Comparisons among all three groups were only reported for medical and obstetrical data. Sociodemographic data was reported only for those unregistered at the Sloane Hospital and comparisons of sociodemographic data were only made between those with no prenatal care and those with some prenatal care occurring elsewhere.

The total perinatal mortality rate was 12.8 per 1,000 births. Perinatal mortality in the unregistered sample was 20 per 1,000 births. Morbidity in this study was defined as an Apgar score less than or equal to 6 at five minutes. Among all women in the study there was a morbidity rate of 2.2 per cent. The morbidity rate

for the unregistered population as a whole was 5.4 per cent. Morbidity rates were not compared between the two different unregistered populations but the morbidity rate for unregistered women with no prenatal care was reported. This group had a morbidity rate of 8.3 per cent.

Nine and a half percent of all birthweights were less than 2,500 grams. Unregistered women had a LBW rate of 22.9 % and those unregistered with no prenatal care had a LBW rate of 30%. Twelve percent of all deliveries were admitted to the neonatal intensive care unit. Infants of unregistered women had an 11.6% admission rate, those unregistered with no prenatal care had a 21.2% admission rate. Preeclampsia was reported at 4.9% for all women, 5.9% of unregistered women and 7.6% unregistered with no prenatal care.

Unregistered women with no prenatal care were reported to be older, (exact figures were not reported), multigravid (69%) and more likely to abuse drugs. All the women who reported abusing drugs were in the unregistered group who had no prenatal care.

Of 542 unregistered patients, 320 received no prenatal care anywhere. The reasons for this were: financial (103), saw no benefit (23) unaware of pregnancy (9), scared (5), disliked hospitals and

pelvic exams (6), ashamed of pregnancy (1), took care of self (1), unwanted pregnancy (2), and had planned home delivery (1).

The authors concluded that patient education is important and suggested that educators attend community areas to inform residents of the importance of early prenatal care. They also suggested obtaining government funds to establish branch offices in the hospital for early antepartum registration, but it was unclear whether this office would be for health care alone or for registration, health care, and social services.

It is curious that the authors combined all of the unregistered patients into one group. Although unreported, one can assume that some of the unregistered women had an adequate number of prenatal care visits and that some of the registered women had an inadequate number, also unreported. These authors appear to hold a chauvinistic attitude towards registered patients portraying registered patients as "good", regardless of prenatal care attendance, and unregistered patients, regardless of attendance, as "bad".

The authors also appear to be more interested in the pregnancy outcomes of registered vs. nonregistered patients than looking at how these outcomes came to be.

Their recommendations are weak and the only group questioned on reasons for poor attendance were the unregistered group with no prenatal care.

An understanding of the results and contributing factors to inadequate prenatal care attendance would have been made clearer had the following been reported: number of prenatal care visits in the registered group, number of visits in the unregistered group with some care, sociodemographic data on the registered group, and reasons for poor attendance in registered and unregistered patients with an inadequate number of visits.

Although lack of finances was the most commonly cited cause for poor attendance, recommendations for this were not addressed. The authors stated, "In fact the lack of public assistance is a moderately poor reason for not seeking antepartum care since it is relatively easy to obtain some public assistance" (p. 1376). However, they did not provide any data to support this statement.

In general, this study failed to look at the problem of inadequate attendance in an unbiased way. The sociodemographic data of the unregistered group with no prenatal care and the reasons the unregistered group gave for not attending are similar to reason

reported elsewhere. We do not know the data of registered women with an inadequate number of visits.

Similar findings to the above studies were reported in a much smaller study by Parsons & Perkins (1982) who undertook a survey between May, 1978 and April, 1979 in Nottinghamshire, England to determine why some women do not attend prenatal care. Women who arrived at the hospital in labor having had no prenatal visits or only one or two visits were identified. After delivery they were interviewed and their charts reviewed to discover their process of recognizing pregnancy and decisions made regarding care. In those with a few visits, interactions with the health care providers were examined in order to ascertain if this interaction or the providers themselves were in any way responsible for the women's failure to return.

Out of a total delivering population of 5,779, 21 women were identified as having inadequate prenatal care. This small number may be due to the availability of health care in England at minimal cost. These women were divided into three groups: (a) the frightened teenager, of which there were 11; (b) the competent childbearer, which had 9 and (c) those with social problems with a total of 2.

The teenage group reported concealed and unwanted pregnancies which they were afraid to disclose to parents and friends out of shame and/or fear of parental chastisement. One teenager simply did not acknowledge the pregnancy at all and was surprised to find herself a mother. Only one reported wanting the child. She concealed her pregnancy because she feared her mother would force her to have an abortion. The overwhelming characteristic of this group was fear.

The "competent childbearer" group were composed mainly of married women (7 of 9), who had all experienced a healthy previous pregnancy. Social problems were reported in three of the cases but no cases of obstetric or perinatal problems were reported in this group. This group may have gained the confidence from previous healthy outcomes to not value the benefit of prenatal care for each pregnancy.

The "social problem" group consisted of two women. Both had a history of obstetric problems and "massive social problems" although details of these were not reported.

There were no stillbirths and no cases of preeclampsia in the study group. There were 3 neonatal unit admissions (14.3%) in the study group which was comparable to the total delivering population which had

a 13.75 % neonatal admission rate. The study group was so small compared to the total delivering population however that inferences between lack of attendance and pregnancy outcome cannot be drawn.

The authors' recommendation for the teenagers was to provide a caring attitude during the hospital stay so they would not be frightened and would therefore be more willing to receive care in future pregnancies. For the competent childbearer, education about the importance of prenatal care in spite of a healthy previous outcome was recommended. It was thought unrealistic to expect the social problem group to attend prenatal care. Therefore it was recommended that ways to identify this group prenatally be established so that home visits could occur.

The recommendation for the frightened teenager group is inadequate because it does not address those teenagers experiencing a pregnancy for the first time. In spite of the fact that most of the teenage pregnancies were unwanted, contraceptive education was not listed as a recommendation.

Education may or may not reach the "competent childbearing" group. Like the "social problem" group, home visits may help with their care, although ways to identify this group in the prenatal period need to be

developed. This study's small sample size makes it impossible to generalize these findings yet teenagers; older, multigravid women; and women with social problems have been reported as being at risk for inadequate prenatal care attendance in other studies.

Joyce, Diffenbacher, Greene & Sorokin (1983) conducted a study at Cleveland Metropolitan General/Highland View Hospital to examine the reasons women do not seek prenatal care and how these reasons vary among different subgroups. During the calender year 1978, data was collected through chart review on 1,975 patients who gave birth. Of these, 70 had no prenatal care. Information on maternal demographics, utilization of care, perinatal outcome, and reasons for no prenatal care were reported.

The sample ranged in age from 15 to 40 and the mean age was 23. The sample was 54% nonwhite and 46% white with one Asian and two Hispanic women in the nonwhite group. Information concerning the racial composition of Cleveland was not provided. Single women comprised 61% of the sample, of which 16% were separated or divorced. More than two thirds had not completed high school. Eighty-one percent relied on welfare for payment, 13% had private insurance and 6% were self pay. Twenty-five percent were primiparous and

75% multiparous. This data is again similar to the demographic data in the studies already reported.

Reasons for not attending prenatal care were available in the charts of 43 of the 70. These reasons were termed "barriers" and divided into three groups: internal barriers, external barriers and no reason or "felt fine". The internal barriers included fear of doctors, depression, denial of pregnancy, and unplanned pregnancy. External barriers included financial problems, lack of childcare, no transportation, inability to obtain appointments and long waiting periods in the waiting room. Similarities to barriers faced by other women in the previously reported studies are apparent.

The women were divided into 4 age groups: teens, young adults, adults and older adults. No age figures were given. Reasons for no prenatal care in all age groups tended towards internal barriers with teens and young adults more often in this group. Fifty percent of the teens and 52% of the young adults had reasons which placed them in the internal barrier group. Only 33% of adults and 33% of older adults cited internal barriers.

External barriers were found to occur most often in the teen and older adult group, with both reporting

33%. External barriers to care were reported by 24% of the young adults and 11% of the adults.

Adults comprised the largest number in the no reason/felt fine category with 56%. In this group teens comprised 17%, young adults 24% and older adults 33%. The inclusion of so many adults in this category may be a reflection of the multiparous, competent childbearer mentioned in the previous study, while the 50% rate for teens in the internal barrier group may reflect the fear and shame found amongst teens in that study.

It is apparent from looking at the list that cross-over between internal and external barriers is possible and that this rigid placement of women into groups may be artificial. For example, a poor woman, due to lack of finances may become depressed when she cannot obtain the care she needs, and reject or ignore the pregnancy. Lack of finances is an external barrier yet it produces symptoms which are placed under internal barriers. Inadequate education, and/or youth, may leave a woman with a deficit in the skills needed to deal with doctors; she then may find them intimidating and hence fear them. Inadequate education is an external barrier, fear an internal one. Therefore the separation of barriers into internal and external types may give an artificial view of the problem,

though it is interesting from an organizational perspective. Other criticisms include the study's small sample size (43) and reliability of extracting reasons for no care from charts instead of personal interview.

In another study from England, O'Brien and Smith (1981) conducted a study in London to understand prenatal care from the patient's point of view in order to be better informed on how to encourage women to attend. Women from four medical registration districts were interviewed at 3 to 5 months postpartum. They were questioned about where they had received prenatal care, when they had their first visit, how many visits occurred, whether they had registered for childbirth and parenting classes and the convenience of attending. All women interviewed had received some prenatal care. As in the above studies, the authors found that those most likely to have an inadequate number of prenatal care visits came from lower socioeconomic classes, were teenagers, had four or more children and never had held a job. Women from the lower socioeconomic classes were also underrepresented in the childbirth and parenting classes.

Long waits in the waiting room, transportation and childcare were mentioned most frequently as problems

hindering attendance and were more prevalent in the lowest social classes. Women who saw a general practitioner were more pleased with their care than women who were seen at a hospital's clinic. The authors concluded that this was because there was more continuity of care with the general practitioner than at the hospital, although concrete evidence for this conclusion is lacking.

This study corroborates the others in terms of the demographic characteristics of women with inadequate attendance at prenatal care and the problems they faced in seeking care. It is interesting to note that finances were not mentioned as a problem in this second European study. There were no specific solutions offered. The authors did comment that women's views on how they are treated at prenatal care need to be acknowledged in order to encourage attendance. This view was mentioned in the previous European study but has not been mentioned in studies cited so far from this country.

Adolescents are frequently mentioned as a high risk group for inadequate attendance. Simms & Smith (1984) conducted interviews with 533 teenage mothers in England and Wales at four months postpartum about the medical and antenatal care they had received. One

fifth had an inadequate number of prenatal care visits. The interviews were divided among those who had registered late and those who had missed appointments or did not return after an initial appointment had been kept.

The first group gave the following reasons for the late registration: ignorance of the pregnancy (45%), fear or embarrassment (16%), denial of the pregnancy (14%), inability to tell parents (14%), unaware of the necessity to go earlier (13%), fear of being talked into an abortion (4%), and no reason (8%). Inability to tell parents and denial of pregnancy may be related to fear of the repercussions of an unwanted pregnancy. If so, this would boost the fear category to 44%. This would closely parallel the findings among teenagers in the study previously cited by Parsons & Perkins (1982).

The second group was more apt to be younger (17 and under), and unmarried. They encountered problems with obtaining appointments, they lacked transportation and childcare, and when they felt fine did not see the need to go. This group also more frequently described their pregnancies as unintended or had considered adoption.

Simms recognized that many of the reasons women cited for not attending prenatal care were due to problems with the health care system. She recommended improving the appointment system and reducing the number of visits while improving their quality. Citing Hall's work (1980) she states that the number of prenatal care visits currently recommended may be more than necessary and recommended less visits of higher quality in order to attract this group to care and to keep them returning. There was no recommendation for those who did not understand the importance of prenatal care or for those who failed to recognize they were pregnant.

In a U.S. study which compared women with varying amounts of prenatal care, Poland, Ager & Olson (1987) attempted to determine the relative effects of sociodemographic, medical, attitudinal, cultural and structural variables on prenatal care seeking. Most studies report on barriers, demographic characteristics and attitudinal factors of women with inadequate attendance but do not examine the relative effect these factors have on the attendance of all women, including those with an adequate number of visits. In this respect this study is unique.

Their sample consisted of 111 low-income, primarily black women who received varying amounts of prenatal care at Hutzel Hospital in Detroit. The women were studied 1 to 5 days postpartum, had viable infants and participated voluntarily.

Data collection consisted of a structured interview with open-ended and fixed choice questions and review of the medical chart. The interview was designed to explore the woman's attitudes, beliefs and responses to pregnancy from the moment she thought she was pregnant through delivery. Medical chart review was undertaken to obtain sociodemographic information and selected maternal and antenatal conditions in order to formulate a risk score.

The varying amounts of prenatal care were separated into adequate, intermediate and inadequate care. Thirty-five women had adequate prenatal care visits, 35 had an intermediate number, 19 had inadequate visits and 22 had no care.

The results showed no statistical difference between race, age, marital status and number of prenatal visits, although there was a trend for married women to receive better care. It was found that 40% of women who received any care went to more than one provider with neighborhood emergency walk-in centers

the most popular because they were convenient, required no appointments and accepted Medicaid or charged $10 a visit. However, these physicians provided no follow-up or pregnancy literature and were perceived by the women to be less competent.

There was a significant difference in the amount of care received and parity, with better care received by those with less parity. Across groups women believed that having had one or more pregnancies made it less important to seek care. This has been a consistent finding in many of the studies previously cited. There was also a significant difference between groups in antenatal risk score; women in the inadequate and no care groups had higher risk scores attributable primarily to the use of illicit drugs. Thirty-one percent in the poor care group had abused drugs compared to 7% in the adequate care group.

There was a linear trend, though statistically nonsignificant, between women who had inadequate or no care and type of transportation used. More expensive means of transportation such as taxis and private cars were used more often by women with adequate care.

Six sociocultural factors were identified by stepwise multiple regression and contributed to 49% of the variance for amount of prenatal care. The following

variables were used by Poland (1987) to formulate a risk score for non-attendance: amount of insurance, attitudes towards health professionals, delay in suspecting pregnancy, delay in telling others about the pregnancy, perception of the importance of prenatal care and initial attitudes about being pregnant. Each factor contributed one point to the score. Therefore the highest risk score was equal to 6.

Women were found to be significantly at risk for an inadequate number of prenatal care visits or no care if they had no insurance or an inadequate amount, had negative attitudes towards the pregnancy, waited one or more months before telling others about the pregnancy, did not believe care was important and had negative attitudes towards health care providers. Women who recognized the pregnancy at a gestation of greater than 2 months were more apt to have inadequate or no care although this was also not a statistically significant finding.

A risk score of 6 placed a woman at a higher chance for receiving an inadequate amount of prenatal care than a risk factor of 0. Fifty per cent of the women with a risk factor of 3 had an inadequate number of prenatal care visits.

Social support was thought to be a possible explanation for adequate amounts of care. Support of family and friends as well as social workers and health care professionals was discussed. Women with a higher number of prenatal care visits had more family and friends available for tangible assistance such as transportation and/or who showed an interest in the pregnancies. The support of professionals was recognized as having a positive effect on prenatal care attendance. Women with poor attendance had less insurance partly because they perceived greater difficulty registering for Medicaid, including not understanding the forms or the process and encountering hostile welfare workers. Lack of support was also attributed to health care professionals who were seen as uncommunicative, frightening and hostile. Women with an inadequate number of visits were more likely to report these negative characteristics.

The authors concluded that lack of social support, inadequate transportation, location of clinics far from the womens' homes, beliefs and attitudes among poor women about the importance of prenatal care, problems with reading and understanding information, fear of doctors, discontinuity of care and discourteous service may all contribute to a woman's lack of attendance in

spite of the availability of care. There were two recommendations to improve attendance: changing the attitudes of the women who do not seek care or altering the provision of services. It was recognized that the latter is a more feasible undertaking and could in the long run also contribute to changing womens' attitudes as women recognize that health care providers are taking an interest in their identified needs.

The authors recommended that the attitudes of women receiving varying amounts of prenatal care be assessed locally in order to: (a) identify barriers in the health care system which can be altered, (b) identify the personal barriers of these women towards receiving care and (c) develop population-specific outreach efforts for women at risk.

Women in this study encountered many of the problems previously mentioned as affecting attendance at prenatal care. However, this study is unique because it is the first to focus on the association between social support, both emotional and tangible, and attendance at prenatal care.

Summary

Research on inadequate attendance at prenatal care and its consequences in terms of birthweight, prematurity and cost to society have been well documented. However, studies which have sought to understand the reasons for poor attendance from the women's perspective are minimal. In the previous section, studies were reviewed which for the most part were designed to produce a composite picture of the woman most likely to have poor attendance at prenatal care and her reasons for not attending.

All the studies used homogenous samples which is reflected in the similarity of demographic characteristics in the samples studied. In addition, some used a small sample size. These factors make generalization of individual studies impossible. Yet, when taken as a whole, the samples showed consistent findings across studies and over time. The reasons women gave for inadequate attendance in these studies also support the findings of the Institute of Medicine (1985) and the American Nurses' Association (1987). A woman's demographic risk for inadequate attendance and the most frequently cited reasons for not attending become apparent from this review.

Nevertheless, a gap in the literature has been recognized. Although the demographic data of women with adequate and inadequate attendance have been compared, only women with inadequate attendance were interviewed in these studies with the exception of the study by Poland, Ager & Olson (1987). These authors also interviewed women with adequate attendance to see if they ever encountered obstacles to care and if so how they overcame them.

Conceptual Framework

The conceptual framework used in this study was derived from the variables identified in the review of the literature. It is apparent that the demographic factors that place a woman at risk for inadequate attendance are non-white race, multiparity, single marital status, large family, decreased income, undereducated, at extremes of the age continuum, drug abuse, and no work history. The barriers that influence attendance appear to be lack of childcare, lack of finances and/or insurance, conflicts with work, unaware of services available, transportation problems, fear, time involved, unaware of benefit, unaware of pregnancy, dislike of doctors, shame, self-care, unwanted pregnancy, alternative delivery planned,

healthy previous pregnancy, depressed, unavailability of appointments, long waits to be seen and lack of social support.

These known demographic and situational variables formed the framework of this study. The purpose of this study was to determine to what extent these barriers existed in a population of women with varying amounts of prenatal care, recently delivered in Portland Oregon.

Research Questions

The research questions pertinent to this study were:

1. Are there differences in the demographic characteristics of women with adequate attendance, intermediate attendance and inadequate attendance?
2. What are the barriers that influenced attendance in the sample of women in this study?
3. Do women with adequate attendance ever encounter barriers to attendance?
4. If women with adequate attendance experience barriers to care, how were these barriers overcome?

Chapter II

This chapter will describe the research methods that were used to determine the demographic differences and the relative importance of different barriers to prenatal care attendance in a sample of women with varying amounts of care. The design, setting, sample, data collection methods and analysis will be described.

Methods

Design

The design of this study was non-experimental, correlational and ex post facto. This design was necessary in order to study women who had received no care until they presented for delivery as well as to question all women about events in their pregnancies that had already occurred.

For the purpose of this study amount of prenatal care was divided into adequate, intermediate and inadequate number of visits. Adequate care was defined as eight or more prenatal visits with the first visit occurring in the first trimester (Adapted from The American Academy of Pediatrics and the American College of Obstetrics & Gynecology, 1984). Intermediate care was defined as four to seven visits, regardless of trimester care began, or care beginning in the second

trimester, regardless of number of visits. Zero to three visits, or care beginning in the third trimester, regardless of number of visits was considered to be inadequate. (Adapted from Remy & Senner, 1986).

Setting

The postpartum unit of a large, metropolitan, university hospital in Portland, Oregon was the setting for this study. The majority of clients were low-income women who relied on Medicaid or were self paying on a sliding-fee schedule and received their prenatal care in the hospital's prenatal clinic or in one of the clinics run by the county and affiliated with the university. A small number of private patients receive care at the private Obstetric and Gynecology Clinic associated with the university.

Deliveries occurred in the hospital's delivery area with care provided by interns, residents, nurses, nurse-midwives, medical students and both baccalaureate and graduate student nurses. Women with all levels of attendance at prenatal care deliver in this setting.

Sample

A convenience sample (n=50) was recruited from the postpartum unit of this hospital. The criteria for inclusion were the following: (a) delivery of a live infant, (b) age 18 or older, (c) ability to understand

English and (d) consent to participate. In order to protect women from emotional discomfort, women who delivered a non-viable or physically disabled infant were not asked to participate. Women who delivered prematurely with an adequate number of visits up to the time of delivery were not interviewed as it was determined that it would be difficult to know if they would have continued to attend care throughout the pregnancy. However, those who delivered prematurely with an inadequate number of visits, according to the criteria above, were interviewed.

Data Collection Methods

Data were collected regarding demographic characteristics, number of prenatal care visits and attendance related to barriers. Demographic data were collected from chart review and when necessary, personal interview. Included in the demographic data collection data in the order they appear in the questionnaire (Appendix B) are the following: age; race; parity; marital status; number of living children; size of household; monthly income level; income level in relation to poverty, as determined by the Welfare Dept. of the State of Oregon; years of education; occupational history; use of illegal

drugs; infant's birthweight; Apgar score at one and five minutes and weeks gestation of the pregnancy.

Number of prenatal care visits and the trimester prenatal care began were collected for each woman by review of their prenatal care records. This data was divided into adequate, intermediate and inadequate attendance using the criteria described above.

Data on barriers and women's perceptions were collected from personal interview using a questionnaire developed by Poland (1987; Appendix A). No data on validity and reliability was available for this questionnaire.

For ease in transferring data from the questionnaire to computer, Poland's (1987) questionnaire (Appendix A) was modified (see Appendix B). The numbers to both Poland's (1987) original questionnaire and the modified version are provided below. Poland's (1987) numbers are listed first, the modified ones second.

The questions asked covered the following: month pregnancy was suspected (1) (22); initial attitude towards pregnancy (2) (24); delays in telling others about pregnancy (3A, 3B) (25, 28); attitude towards health professionals (4, 7C, 7D, 11B, 17, 18, 19) (36, 39, 42, 54, 55, 70, 83, 84, 85, 88, 91, 94); awareness

of where to get care (4, 15) (32, 33, 34, 79); amount of childcare available (5C) (45, 46); conflicts between prenatal care and work/school schedules (5D, 9) (47, 62, 63, 64); transportation problems (5A, 16) (43, 80); type and amount of insurance coverage (5B) (44) time involved to get seen (6B) (50), availability of appointments (6A) (49); satisfaction with care (7A,B,C,D,) (52, 53, 54, 55, 36, 39, 42, 83, 84, 85, 88, 91 ,94); cost of attending prenatal care (8A,B,C,D,E) (57, 58, 59, 60) perceived importance of prenatal care (11, 11A) (68, 69); amount of support available from family, friends and professionals during the pregnancy (3A,B, 12) (25, 26, 27, 28, 29, 30, 31, 71 -77) and amount of care with previous pregnancies (18) (86, 87, 89, 90, 92, 93)

In addition, women with an adequate number of prenatal care visits were asked if anything made attending prenatal care difficult (20). Those with an affirmative answer were asked how the barrier(s) was/were overcome (21). These items are only found on the modified questionnaire (Appendix B).

Procedures

Permission to collect data was sought from the postpartum area at the hospital. School of Nursing and O.H.S.U. protocols for research were followed. Women were told that the purpose of the study was to gather information that will help health care personnel provide better prenatal care. A consent form approved by the University's Committee on Human Research (Appendix C) was read to each woman and those agreeing to be interviewed signed it.

A structured approach was used to assure uniformity in the manner data were collected from each subject. This was accomplished by approaching the women in the same manner and using the interview guide, as much as possible, in the same way with each woman.

All women who fit the criteria for the study were approached by the investigator on the postpartum unit as soon as possible after delivery as discharge usually takes place within 24 hours. Women were not approached until a minimum of 4 hours had passed from time of delivery to interview to allow time for recovery.

Initially, women were selected for interview in a random way. On the first day those in even-numbered rooms were approached, those in odd-numbered rooms were approached on the second day. It soon became apparent

that this would not provide enough women from different attendance groups. Thereafter the approach became purposive and women were interviewed based on their attendance pattern. In spite of this, the final three groups contained different numbers of women. Other factors, such as the necessity to exclude some women because they did not fit the criteria for sampling (too young, non-English speaking) or women choosing not to be interviewed, also determined the final sample.

Analysis

For the demographic data frequency distributions were used. Analysis of interval level data included T-test and analysis of variance (ANOVA). Chi-square analysis was used for nominal level data. A probability level of $P<.05$ was considered to be statistically significant.

CHAPTER III

This chapter will describe the sample and discuss the findings of each of the research questions. A description of the sample will be given first and is divided into maternal and infant characteristics.

Fifty women were interviewed. Only one woman in this sample had no prenatal visits. This woman did check her own blood pressure on machines at the supermarket and believed this was sufficient monitoring of her pregnancy. She is referred to several times in the findings as she was unable to answer those items which could only be answered by those who made at least one visit, such as attitudes towards care received and method of transportation to care.

Maternal characteristics.

Twenty percent of the sample had inadequate attendance, 28% had intermediate attendance and 46% had adequate attendance. The sample ranged in age from 18 to 43 yrs. The mean age was 25.14 years.

Forty-one respondents were white and 9 were non-white (Table 1). In the non-white group 6 were black, 1 was Hispanic, 1 was Asian and 1 was Native American. More Hispanic and Asian women were approached than is

Table 1

Comparison of Race and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
White	n=8 19.51%	n=13 31.71%	n=20 48.78%	n=41 82%
Non-White	n=2 22.22%	n=4 23.53%	n=3 13.04%	n=9 18%

P<0.6832

reflected but were not interviewed due to language barriers. In terms of parity, 44% of the sample had just delivered their first child, 24% their second, 20% their third, 2% their fourth, 8% their fifth and 2% their sixth.

The reason for investigating marital status was to determine the amount of support a woman had at home. Because so many women live with a partner and are not married and others may not be married or live with a partner but may live with other family members, such as siblings or parents, it was decided not to ask about marital status but instead to ask if the woman lived alone or with someone. In this sample, most women lived with someone regardless of marital status (Table 2).

Table 2

Comparison of Presence of Others in the Household and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Living With Someone	n=9 20%	n=15 33.33%	n=21 46.67%	n=45 90%
Living Alone	n=1 20%	n=2 40%	n=2 40%	n=5 10%

P<0.9501

Three women interviewed in this sample did not know their monthly income. Two women reported no income; one was a 19 yr. old who had been living on the streets with her boyfriend and had recently moved into an abandoned house which had no heat or running water. On the other end of the spectrum, one woman reported a monthly income of $5,000. The mean monthly income for the sample was $1025.10. When the mean is calculated without including the woman with the highest monthly income, the mean income was found to be $ 927.82 a month (Table 3).

Table 3
Comparison of Monthly Income and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Mean Monthly Income	$ 777.77	$ 838.06	$ 1262.31	$ 1025.10
Standard Deviation	$ 456.96	$ 465.74	$ 1115.60	$ 852.15

P=0.19

Income was also evaluated in terms of whether it was above, at, or below the income eligibility for Welfare from the State of Oregon. Income and household size are used to determine this figure. For example, a family of three to be eligible for Welfare benefits from the State of Oregon cannot have an income which exceeds $740.00 a month. This figure is 91.5% of the Federal Poverty Level (F.P.L.).

In this sample, 27 women (57.45%) had a monthly income below the level for Welfare eligibility, while 20 (42.55%) were above the limits for welfare eligibility. Three women were not included because they did not know their monthly income (Table 4).

In terms of years of education, 46% of this sample did not finish high school, 24% completed only high school, 28% had some education past high school while 2% completed 4 years of college (Table 5). Work history was collected using the following categories: no work history, manual/service, and skilled. The skilled group included professional and managerial work. In this sample 4% had no work history, 66% had manual/service and 30% were skilled (Table 6). In this sample, 77.5% denied using illegal drugs, while 22.45% admitted they did (Table 7).

Table 4

Comparison of Eligibility for Welfare Benefits From the State of Oregon and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Income Below the Welfare Limit	n=5 18.52%	n=12 44.44%	n=10 37.04%	27 57.45%
Income Above the Welfare Limit	n=3 15.0%	n=4 20.0%	n=13 65.0%	20 42.55%

P<0.139

Table 5
Comparison of Years of Education and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Mean Years of Education	11.80	11.15	12.25	11.78
Standard Deviation	1.47	2.04	1.61	1.77

P= 0.157

Table 6

Comparison of Work History and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
No Work History	n=1 50%	n=1 50%	n=0 0.0%	n=2 4.0%
Manual/ Service	n=5 15.15%	n=13 39.39%	n=15 45.45%	n=33 66.0%
Skilled	n=4 26.67%	n=3 20%	n=8 53.33%	n=15 30%

P< 0.40

Table 7

Difference Between Illegal Drug Use and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
no drug use	n=5 13.16%	n=14 36.84%	n=19 50%	n=38 77.55%
positive drug use	n=4 36.36%	n=3 27.27%	n=4 36.36%	n=11 22.45%

P<0.21

Infant characteristics.

The mean birthweight of the infants in this sample was 3314 grams (Table 8). A value of 1 was given to an infant if its Apgar score fell between 0-3, 2 if it fell between 4-6 and 3 if it was between 7-10. Therefore, the mean Apgar at 1 minute for this sample of infants, using the aforementioned numbering system was 2.63 (Table 9). At 5 minutes it was 2.83. The mean weeks of gestation for this sample was 39.07 weeks (Table 10).

Table 8

Comparison of Mean Birthweight and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Mean Birthweight (Gms.)	2905	3525	3514	3314
Standard Deviation	952.63	580.38	714.14	739.37

P=0.229

Table 9

Difference Between Mean One Minute Apgar Score and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Mean Apgar Score	2.5	2.7	2.69	2.63
Standard Deviation	0.421	0.58	0.64	0.57

P=0.87

Note 1= Apgar of 0-3
2= Apgar of 4-6
3= Apgar of 7-10

Table 10

Difference Between Mean Weeks Gestation and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Mean Weeks Gestation	36.60	39.50	41.13	39.07
Standard Deviation	4.49	1.90	31.60	3.26

P= 0.091

Research Question 1: Are There Differences In the Demographic Characteristics of Women With Adequate Attendance, Intermediate Attendance and Inadequate Attendance?

Descriptive data was determined by the mean, median and frequency distribution of each variable. Chi-square, ANOVA and t-test analysis was used to determine differences among the three groups.

Maternal Characteristics

In terms of adequacy of attendance, there was no significant difference among women based on their age. The mean age of women with an inadequate number of visits was 25.18 years, with an intermediate amount, 25.23 years and with an adequate amount, 25.04 years.

Because of the small number of non-white participants in this sample, racial differences were divided into white and non-white. The different non-white subgroups were not listed. Although there were no statistically significant differences between women based on race and amount of prenatal care, the trend was for non-white women to receive less care than white women (Table 1).

As mentioned, marital status was recorded but analysis was executed in terms of those who lived alone

vs. those living with someone, regardless of marital status. The findings showed no statistically significant difference between those who were living alone and those who lived with someone in terms of adequacy of attendance, although those living with someone more often had adequate attendance than those living alone (Table 2).

There was no statistical difference between a woman's attendance at prenatal care and the number of living children she had. Likewise, size of household did not appear to be a contributing factor to attendance at prenatal care.

In terms of adequacy of prenatal care visits, there was no statistically significant difference between groups based on monthly income. However, the trend was for those with more income to have more visits (Table 3).

There was no statistically significant difference between attendance groups based on their eligibility for Welfare benefits. Nevertheless, there were more women whose income fell below the eligibility level for Welfare benefits in the inadequate and intermediate attendance groups than in the adequate attendance group (Table 4). There was no statistically significant difference between groups based on years of education

although the trend was for those with adequate care to have slightly more education than the others (Table 5).

There was no statistically significant difference among groups based on work history, although the trend was for those with no work history to be found only in the inadequate and intermediate groups while those with a skilled work history were concentrated in the adequate attendance group (Table 6). There was no statistically significant difference between groups based on illicit drug use, although those with no drug use were concentrated in the adequate attendance group while those with a positive drug use history were fairly evenly distributed among groups (Table 7).

Infant Characteristics

There was no statistically significant difference between attendance groups based on the birthweight of their babies. As expected, the inadequate attendance had the lowest mean birthweight. Surprisingly, the intermediate attendance group and not the adequate attendance group had the highest birthweight (Table 8) although the difference is minimal.

There was no statistically significant difference between attendance groups based on Apgar scores at either 1 or 5 minutes. The inadequate attendance group

had the lowest mean 1 minute Apgar score. As with birthweight, the intermediate attendance group had the highest mean 1 minute Apgar score but the difference between the intermediate and the adequate attendance group was minimal (Table 9).

At 5 minutes the inadequate attendance group continued to lag behind with the lowest mean Apgar score. The intermediate attendance group fell to second place while the adequate attendance group took first place.

There was no statistically significant difference between groups based on length of gestation. As expected, the inadequate attendance group had the lowest mean gestation length at 36.6 weeks. The intermediate attendance group had a mean gestation length of 39.5 weeks. The adequate attendance group had the longest mean gestation length at 41.13 weeks (Table 10).

Research Question 2. What are the Barriers That Influenced Attendance in the Sample of Women in This Study?

Women were interviewed about their attitudes towards their pregnancies, health care and health care providers. They were also interviewed about the amount

of support they received from friends, family and as from health-care professionals. In addition, they were asked about the importance of various barriers to their seeking prenatal care. Answers to these questions were compared among the different attendance groups to determine the relative importance of each of these areas on prenatal care attendance. To determine if there were any differences among the groups, ANOVA and chi-square analysis were used.

There was no statistically significant difference in number of visits based on initial attitude of the woman toward her pregnancy. Nevertheless, those with adequate attendance were more frequently pleased than the other groups.

The amount of time that elapsed between when the women knew they were pregnant and when they told a first confidante about the pregnancy was recorded. Women were considered to have an adequate support network the sooner they disclosed to a confidante the fact of their pregnancy. If the first confidant's initial reaction was favorable, as opposed to unfavorable, and if helpful or positive advice was given by the confidante, as opposed to no or negative advice, a woman was considered to have a supportive

social network. This same information was used to gain information about the second confidante.

If the first confidante told of the pregnancy was a woman's partner, it was assumed that her support network was better than if the first confidante was a relative, friend or no one. The value 1 was given if a woman told no one, 2 if a friend was told first, 3 if a relative and 4 if the father of the baby or current partner was told first.

There was no statistically significant difference between attendance groups based on who the first confidante was. There was a trend for those who told the father of the baby first to more often have adequate attendance than those who first confided in someone else. At the same time there was a greater percentage of women with adequate attendance who told a friend or relative first than for the other groups. Of the sample as a whole only one person (2%) told no one of the pregnancy; she had intermediate care.

Nine persons (18%) told a friend or relative first; 22.22% of these had inadequate care, 11.11% had intermediate care and 66.67% had adequate care. Forty persons (80%) told the father of the baby first; 20.00% had inadequate care, 37.50% had intermediate care and 42.50% had adequate care.

There was no significant difference between attendance groups based on the time it took to disclose the pregnancy to the first confidante, although there were more women with adequate attendance in the group that had the shortest delay between knowledge of the pregnancy and disclosure of the pregnancy. When this variable was examined using ANOVA there was still no significant difference, but the trend again showed that those with adequate attendance told the first confidante much sooner than did the other 2 groups (Table 11).

The initial reaction of the first confidante was not found to be a significant contributor to a woman's attendance at prenatal care. However, more women with adequate attendance judged the attitude of the first confidante as pleased more often than did the other two groups.

When asked about the advice given by the first confidante, 26 (52%) had no answer to this question

Table 11

Difference Between Delay in Telling the First Told of the Pregnancy and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Never Told	n=0 0.0%	n=1 100%	n=0 0.0%	n=1 2.0%
Three Weeks and More	n=4 30.77%	n=5 38.46%	n=4 30.77%	n=13 26.0%
Immediate to Three Weeks	n=6 16.66%	n=11 30.56%	n=19 52.77%	n=36 72%

P<0.47

either because no advice was given or because the subjects could not remember what it was. Twenty-four (48%) did have an answer. The responses ranged from "He told me to get prenatal care because he wanted everything to be o.k." to "You should get an abortion." If the advice was supportive in any way or included seeking health care it was labeled supportive, for a total of 23 cases (46%). Since the woman told to get an abortion in fact wanted the child this advice was considered negative. It was the only instance of negative advice (0.2%) among the first told.

The trend showed those with adequate care remembered having received more instances of supportive advice (56%) than the other groups (31% intermediate care, 30% inadequate care). The one woman with negative advice had intermediate attendance. Of the 54% of the sample with no advice or not remembering the advice, only 43% were in the adequate attendance group; 57% had intermediate attendance and 70% had inadequate attendance.

There was a statistically significant difference (P=0.0262) among groups in terms of the delay between knowledge of the pregnancy and disclosing the knowledge to a second confidante. Those with adequate attendance confided sooner than the average while those

with intermediate and inadequate attendance both confided later than the average.

There was no statistical significance between groups in terms of who the second confidante was, but all of the woman who did not confide in anyone second, were in the intermediate or inadequate attendance groups. Those who told a relative or father of the baby second were concentrated in the adequate care group.

The initial reaction of the second told was initially recorded as displeased, pleased, ambivalent and other. During analysis, due to small cell sizes, the ambivalent and displeased responses were collapsed into one category; not pleased. Those women who perceived the initial reaction of the second told to be not pleased were concentrated in the inadequate and intermediate care groups while those who perceived the initial attitude of the second told to be pleased were found in the adequate care groups.

There were 30 women (60%) who either received no advice from the second told or who could not remember the advice given, while 20 women (40%) did. More women with adequate attendance remembered receiving advice about pregnancy from the second told.

Health care providers

Women were asked about the type of primary health care provider (HCP) they saw prenatally, the perceived helpfulness of that person, the attitudes of the clinic staff, their confidence in their HCP and what they thought were the important things their HCP could do for them. These questions were asked in order to know if there was any relationship between type of HCP and women's attitudes towards their HCP and attendance.

Type of health care provider had no significant difference on adequacy of attendance, although those who saw a certified nurse-midwife (C.N.M.) were slightly more likely to have adequate attendance than the other groups. Those who saw a nurse practitioner (N.P.) were the next most likely group to have adequate attendance. The group who saw a medical doctor were slightly less likely than the other groups to have adequate attendance. In this sample 18 (36%) saw an M.D., 10 (20%) saw a C.N.M. and 22 (44%) saw a N.P. as their primary provider during the pregnancy.

Of those who saw an M.D., 8 (44.44%) had adequate attendance, 7 (38.89%) had intermediate attendance and 3 (16.67%) had inadequate attendance. Of the 10 who saw a C.N.M. 5 (50%) had adequate attendance, 3 (30%) had inadequate attendance and 2 (20%) had intermediate

attendance. For those seeing an N.P. 10 (45.45%) had adequate attendance, 7 (31.82%) had intermediate attendance and 5 (22.73%) had inadequate attendance.

All women found the health care providers helpful although those with adequate attendance more often found the health care provider to be very helpful when compared with the other groups (Table 12). Women were asked to rate the attitudes of the staff at the prenatal care clinic. Their choices were negative, neutral or positive. Because of small cell sizes the negative and neutral were collapsed into one group under the heading not positive. There was no statistical significance between groups on this item. Three women (6%) found the attitudes of the staff to be not positive, 46 (92%) found the staff's attitudes to be positive. The woman with no prenatal care visits is not included in the analysis of this item.

The amount of confidence women had in their HCP was also questioned. No one had a complete lack of confidence in their HCP. One woman was unsure and one had not received any care during her pregnancy.

Table 12

Comparison Between Perceived Helpfulness of Primary Health Care Provider and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Not Helpful	n=0	n=0	n=0	n=0
Helpful	n=5 33.33%	n=6 40%	n=4 26.67%	n=15 30.0%
Very Helpful	n=5 14.29%	n=11 31.43%	n=19 54.29%	n=35 70.0%

P<0.144

Professional support services.

Women were asked if they saw a nutritionist, where they saw the nutritionist and if they perceived the nutritionist as helpful or not. The same information was asked about visits to a social worker. They were asked these questions to ascertain the amount of support provided by professionals, the women's attitudes towards these services and to know if there was any correlation between these support services and attendance.

There was a statistical significance between visits to a nutritionist and attendance ($p<0.0523$). Thirty-four women (68%) did not see a nutritionist during their pregnancy while 16 (32%) did. There were no women who saw a nutritionist from the inadequate care group. Of those who saw a nutritionist 7 (43.75%) were from the intermediate care group and 9 (56.25%) were from the adequate care group.

When asked about the helpfulness of the nutritionist 1 (6.25%) found the nutritionist not helpful, 5 (31.25%) found the nutritionist helpful while 10 (62.5%) found the nutritionist very helpful. Those who found the nutritionist more helpful were concentrated in the adequate attendance group.

There was no statistically significant difference between prenatal care attendance and visits to a social worker. However, there were proportionately more women in the inadequate and intermediate attendance groups who saw a social worker than there were in the adequate attendance group. Of these two groups, there were more women who saw a social worker in the intermediate attendance group.

Barriers.

Women were asked about the barriers to care which have been mentioned in the literature and how these barriers affected them. Responses to these recognized barriers were then examined in terms of the adequacy of attendance.

The first examined was the need to find childcare to be able to attend prenatal care. If a woman was experiencing her first pregnancy she was not interviewed about childcare since it was assumed she would not have a need.

There was no significant difference between need to find childcare and adequacy of attendance. There was a trend for those who did not need childcare to be concentrated in the adequate attendance group. This included those experiencing a first pregnancy. Those

who did need childcare were found to be concentrated in the intermediate attendance group.

Women were asked if attending prenatal care conflicted with work or school. For 17 women this question did not apply as they were not attending school and/or not employed. Twenty-nine women (58%) were in school and/or employed but did not feel that prenatal care conflicted with these endeavors. Only 4 (8%) women felt attending prenatal care did conflict with school or work. Within this group, 2 (50%) had adequate attendance and 2 (50%) had inadequate attendance.

When asked about the convenience of the clinic site, 39 (70%) said it was convenient while 10 (20%) found it inconvenient. There was no significant difference between attitude towards convenience of the clinic and attendance, although more women who found it convenient had adequate attendance, while more who found it inconvenient were evenly spread between groups.

Women were asked why they began care. Their answers were grouped into 3 categories: (a) low cost, (b) concerned about health and (c) referred by the lab where they had a pregnancy test (Table 13). There was no statistical difference between this item and

Table 13

Difference Between Reason for Beginning Prenatal Care and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Low Cost	n=1 25.0%	n=2 50.0%	n=1 25.0%	n=4 8.0%
Concerned About Health	n=5 14.29%	n=13 40.0%	n=17 45.71%	n=35 70.0%
Referred by Lab	n=2 25.0%	n=1 12.50%	n=4 62.50%	n=8 16.0%
Other	n=2 50.0%	n=1 25.0%	n=1 25.0%	n=4 8.0%

P<0.511

prenatal care attendance.

There was a significant difference (P<.0430) between method of transportation and attendance. Those with inadequate attendance more often walked than the other groups while those with adequate attendance more often used expensive means of transportation, such as a car, than other groups. Those who took the bus were evenly distributed among groups (Table 14).

Table 14

Difference Between Usual Method of Transportation to Prenatal Care and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Walked	n=2 66.67%	n=1 33.33%	n=0 0.0%	n=3 6.0%
Bus	n=4 33.33%	n=4 33.33%	n=4 33.33%	n=12 24.0%
Car	n=3 8.82%	n=12 35.29%	n=19 55.88%	n=34 68.0%
Not Applicable	n=1 100.0%	n=0 0.0%	n=0 0.0%	n=1 2.0%

P<.043

There was a statistically significant difference between groups based on cost of transportation ($P<0.0016$). Those who paid more for transportation had better attendance. When this item was examined by ANOVA the findings still showed a significant difference between cost of transportation and attendance ($P=0.02$). Most women paid just around \$9-\$10 for transportation to prenatal care. The inadequate attendance group paid just under \$1-\$9, the intermediate attendance group paid approximately \$10-\$24, while the adequate attendance group paid just over \$10-\$24 for transportation.

Women were also asked about method of transportation to O.H.S.U. when in labor. Forty-three (86%) were driven by a friend or relative while 7 (14%) came by other means. There was no statistically significant correlation between method of transportation in labor and attendance.

In terms of types of medical coverage, the trend was for those with no insurance to be concentrated in the inadequate care group while those with either private insurance or Medicaid to be concentrated in the adequate care group. No woman with private insurance had inadequate attendance (Table 15).

Table 15
Difference Between Type of Medical Coverage and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
No Coverage	n=3 42.86%	n=2 28.57%	n=2 28.57%	n=7 14.0%
Medicaid or PLM	n=7 24.14%	n=10 34.48%	n=12 41.38%	n=29 58.0%
Private Insurance	n=0 0.0%	n=5 35.71%	n=9 64.29%	n=14 28.0%

P<0.160

When asked about length of wait from time of initial contact with a health care agency and first appointment 12 (24%) cited 3 weeks and more, while 38 (76%) cited from immediately up to 3 weeks. There was no statistically significant difference between groups on this variable. Nevertheless, more women with adequate care waited a shorter time (immediate to 2 weeks) than the other two groups for their initial appointment. Seventeen (44.74%) women with adequate care waited the shorter amount of time compared with 12 (31.58%) for the intermediate care group and 9 (23.68%) for the inadequate care group.

There was no statistically significant difference between groups based on the usual amount of wait to be seen in the office. However, those with less than adequate attendance reported waiting longer than those with adequate attendance. In addition, there more women from the intermediate attendance group than the other groups who waited the least amount of time (Table 16).

Table 16

Difference Between Usual Amount of Wait in Office to be Seen and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Thirty Minutes and Above	n=6 35.29%	n=6 35.29%	n=5 29.41%	n=17 34.0%
15 to 29 Minutes	n=1 05.0%	n=5 25.0%	n=14 70.0%	n=20 40.0%
No Wait to 14 Minutes	n=2 16.67%	n=6 50.0%	n=4 33.33%	n=12 24.0%
Not Applicable	n=1 100.0%	n=0 0.0%	n=0 0.0%	n=1 0.0%

P<0.091

There was no statistically significant difference between attendance groups based on how convenient they perceived the site of the clinic to be. However, those with adequate attendance more often found the site convenient than the other 2 groups.

Women were asked if they had missed any prenatal appointments. Of those responding, 24 (48%) denied missing any appointments while 25 (50%) reported missing at least one appointment. The woman with no prenatal care was not included. When asked why they had missed an appointment 24 (48%) of the sample gave a reason and some had more than one reason. The results were found to encompass the following categories : (a) lack of transportation, (b) illness in self or family, (c) late and clinic wouldn't see, (d) weather, (e) too busy, (f) no HCP available so clinic cancelled appointment, (g) forgot and (h) stayed home with husband who had been away (Table 17).

Table 17

Reason for Missed Appointments and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Lack of Transportation	n=2 20.0%	n=3 30.0%	n=5 50%	n=10 20.0%
Illness	n=1 16.66%	n=4 66.66%	n=1 16.66%	n=6 12.0%
Lateness	n=1 50.0%	n=1 50.0%	n=0 0.0%	n=2 4.0%
Weather	n=1 25.0%	n=2 50.0%	n=1 25.0%	n=4 8.0%
Too Busy	n=1 50.0%	n=1 50.0%	n=0 0.0%	n=2 4.0%
No Health Care Provider Available	n=1 50.0%	n=1 50.0%	n=0 0.0%	n=2 4.0%
Forgot	n=0 0.0%	n=0 0.0%	n=1 100.0%	n=1 2.0%
Chose to Stay Home to Visit With Family Member	n=0 0.0%	n=0 0.0%	n=1 100.0%	n=1 2.0%

Expenses

Women were asked various questions about the expenses involved in obtaining prenatal care. Specifically they were asked about costs for medical care, cost of transportation (see under Barriers section), cost of medicines and costs for childcare. There was no statistically significant difference between groups based on cost of medical bills. The woman who saw no one prenatally about her health was not included in this item.

Cost of medicines was looked at separately from cost of medical care. There was no statistically significant difference between groups based on the cost of medicines incurred during the prenatal period.

Attitudes

Women were asked how important they felt prenatal care was. All women interviewed gave a reason for why they did or did not find prenatal care to be important. There was a significant difference ($P<.0001$) between groups on this item (Table 18).

Table 18

Perceived Importance of Prenatal Care and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Not Important	n=1 100.0%	n=0 0.0%	n=0 0.0%	n=1 2.0%
Important/ Somewhat Important	n=6 75.0%	n=1 12.50%	n=1 12.50%	n=8 16.0%
Very Important	n=3 7.32%	n=16 39.02%	n=22 53.66%	n=41 82.0%

P<0.0001

In order to know why women felt PNC was important or not, they were asked to explain why they felt prenatal care to be important or unimportant. All 50 women gave an answer (Table 19 and Table 20). In the tables the findings are reported using the original categories. Table 19 reports the reasons of those believing prenatal care to be unimportant/somewhat important. Table 20 reports the reasons of those believing prenatal care to be important/very important.

Table 19

Reasons Given for Unimportance/Somewhat Importance of Prenatal Care and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Only Important With First Pregnancy	n=1 100.0%	n=0 0.0%	n=0 0.0%	n=1 20.00%
Only Important at the End of the pregnancy	n=2 100.0%	n=0 0.0%	n=0 0.0%	n=2 40.00%
"I felt O.K until I went to the doctor	n=0 0.0%	n=1 100.0%	n=0 0.0%	n=1 20.00%
Only Important for Older Women	n=0 0.0%	n=0 0.0%	n=1 100.0%	n=1 20.00%

Table 20

Reasons Given for Importance of Prenatal Care and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
To Prevent a Bad Outcome/ Insure a Good Outcome	n=6 33.33%	n=5 27.77%	n=7 38.88%	n=18 40.0%
To Monitor the Pregnancy	n=0 0.0%	n=3 25.0%	n=9 75.0%	n=12 26.66%
To Be Reassured That Everything is O.K.	n=1 12.5%	n=2 25.0%	n=5 62.5%	n=8 17.77%
For Health Reasons	n=0 0.0%	n=3 75.0%	n=1 25.0%	n=4 8.88%
To Get the Things You Need Such as W.I.C., Medicaid & Vitamins	n=0 0.0%	n=2 100.0%	n=0 0.0%	n=2 4.44%

In order to know to what extent women perceived friends, families, health care professionals and others to be involved in their pregnancies they were asked about the amount of information they received about pregnancy from these various sources. Specifically, the following were asked about: (a) friends, (b) relatives, (c) school, (d) clinics and health care providers, (e) previous pregnancies, (f) books and pamphlets and (g) pregnancy classes. This question was also included to know if attendance might be influenced by how much pregnancy was discussed in the day-to-day lives of women as well as to know where possible gaps in information about pregnancy might be.

There was no statistically significant difference among groups based on amount of information received about pregnancy from friends. However, those with adequate attendance tended to have received a lot of information from friends while those with inadequate attendance tended to have received no information from friends.

When asked how much information about pregnancy they had received from relatives, 9 (18%) said none, 14 (28%) said moderate and 27 (54%) said a lot. There was no statistically significant difference among groups based on this item, although those with adequate

attendance more often stated they had received a lot of information than the other groups and those with intermediate and inadequate attendance more often stated they had received no information from relatives.

There was no statistically significant difference among groups based on the amount of information about pregnancy received from health care providers/clinics. However, the majority of women reported receiving a lot of information about pregnancy from health care providers/clinics. There was no statistically significant difference among groups based on the amount of information received about pregnancy from previous pregnancies.

Women were asked how much information they received from books and pamphlets. There was no statistically significant difference among groups based on this item. There was no statistically significant difference among groups based on the amount of information received about pregnancy in childbirth education classes. Of those who attended childbirth education classes (n=25), 3 (6%) stated they received no information related to pregnancy, 8 (16%) received a moderate amount of information and 14 (28%) received a lot of information.

In order to know more about the type of support available to women during labor and its relationship to attendance, women were asked who came and stayed with them in labor. This item approached statistical significance ($P<0.09$). Two women reported coming in labor alone, both of whom had inadequate attendance; 14 (28%) reported coming with a friend/relative and 34 (68%) reported coming with the father of the baby.

Women were asked about the helpfulness of the doctors, midwives and nurses at the hospital of delivery during labor and the postpartum period. There was no statistically significant difference between attendance groups based on the perceived helpfulness of these personnel.

Multiparous women were asked if they had seen a health care provider (HCP) with their previous pregnancies and the helpfulness of their previous HCP. This information was elicited in order to know the womens' patterns of past attendance and their attitudes towards their HCP and if this information related in any way to present attendance.

There was a statistically significant difference ($P<.0406$) between seeing a HCP with the first pregnancy and attendance in this pregnancy (Table 21). There was no statistical difference between groups based on

Table 21

Visits to a Health Care Provider With the First Pregnancy and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Did Not See a Health Care Provider In First Pregnancy	n=2 100%	n=0 0.0%	n=0 0.0%	n=2 4.0%
Did See a Health Care Provider In First Pregnancy	n=4 14.29%	n=12 42.86%	n=12 42.86%	n=28 56.0%
Not Applicable (Primiparous Women or Could Not Remember)	n=4 20.0%	n=5 25.05	n=11 55.0%	n=20 40.0%

P<0.0406

perceived helpfulness of the first provider, although all 5 who found the first provider to be unhelpful had either inadequate or intermediate attendance with this pregnancy. Likewise, those who rated the first provider as either helpful or very helpful were more apt to be found in the intermediate or adequate attendance groups with this pregnancy.

Those women experiencing a third pregnancy were asked if they had seen a HCP with their second pregnancy. Only 1 person (2%) had not; this person was in the inadequate attendance group. When asked about the helpfulness of the HCP in the second pregnancy, those who perceived the second HCP to be helpful had better attendance in this pregnancy than those who did not, although it was not statistically significant.

Other findings.

To know how women became aware of their pregnancies they were asked to describe how they first knew. The responses ranged from the subjective "had a feeling" to the objective "positive pregnancy test." Thirty-two percent of the sample responded with more than one response.

Missed period was mentioned most frequently as a reason. Thirty-six percent mentioned it alone while 24% mentioned it together with another reason. The next most frequently mentioned reason was tied between "feeling sick" and "had a feeling", both with 18%. Positive pregnancy test was next in frequency with 8%. Other reasons were "weight gain" (4%), emotional changes (4%), tired (4%), planned pregnancy (4%), basal body temperature elevation (4%), "condom broke" (2%), "stopped pill" (2%) and milk supply decreased (2%).

Interestingly, whereas 65% of those with adequate care and 82% of those with intermediate care claimed missed period either alone or in tandem with another reason, only 20% of those with inadequate care did so. This suggests that women with inadequate attendance might be less aware of their bodies than other groups and/or less disciplined about recording its' functions. Those with inadequate care claimed feeling sick (20%),

positive pregnancy test (20%), had a feeling (20%), and weight gain (10%).

For health-care providers to serve women better, respondents were asked what, in their opinion, were the important things HCP could do for them during their pregnancy. Four women had no answer to this question either because they were unsure or couldn't think of anything. Five categories were identified (Table 22).

Table 22

Correlation Between Responses to What The Important Things Health Care Providers Can Do For Women During Their Pregnancy and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Educate and Inform	n=0 0%	n=7 46%	n=9 54%	n=16 34.04%
Help the Woman Stay Healthy	n=4 28.57%	n=3 21.42%	n=7 50%	n=14 29.78%
Reassure	n=2 25%	n=2 25%	n=4 50%	n=8 17.02%
Perform Practical Functions Such as Taking Blood Pressures and Listening to Fetal Heart Tones	n=2 40%	n=0 0%	n=3 60%	n=5 10.63%
Listen to the Woman	n=2 50%	n=2 50%	n=0 0%	n=4 8.5%

Women were also asked what they thought hospitals and health-care providers could do to make it easier for pregnant women to receive medical care. The answers ranged from "nothing" to very practical suggestions. Eleven categories emerged. Many women gave more than one answer and are therefore represented in more than one category. The categories with frequencies are listed in table 23.

Table 23

Correlation Between Response to What Health Care Providers Can Do to Make it Easier for Pregnant Women to Get Health Care in Pregnancy and Attendance at Prenatal Care

	Inadequate	Intermediate	Adequate	All
Nothing - Everything is Fine Now	n=1 6.25%	n=7 43.75%	n=8 50.0%	n=16 32.0%
Needs to Cost Less	n=3 20.0%	n=6 40.0%	n=6 40.0%	n=15 30.0%
Unsure	n=4 44.44%	n=3 33.33%	n=2 22.22%	n=9 18.0%
Make It Less Intimidating/ More Personal	n=1 25.0%	n=0 0.0%	n=3 75.0%	n=4 8.0%
It's Not Up to Health Care Providers to Help Women Get Care, It's Up to the Women Themselves	n=1 33.33 %	n=0 0.0%	n=2 66.66%	n=3 6.0%
More Advertising	n=1 33.33%	n=1 33.33%	n=1 33.33%	n=3 6.0%
Free Transportation	n=1 100.0%	n=0 0.0%	n=0 0.0%	n=1 2.0%
Teach Preventive Medicine	n=0 0.0%	n=1 100.0%	n=0 0.0%	n=1 2.0%
Stop Overbooking	n=0 0.0%	n=1 100.0%	n=0 0.0%	n=1 2.0%

Research Question 3. Do Women With Adequate Attendance Ever Encounter Barriers to Attendance?

Of the 23 women in this sample with adequate attendance only 7 (30.43%) admitted experiencing difficulty attending prenatal care with this pregnancy; 16 (69.56%) denied experiencing any difficulty attending care. The most frequently cited reasons for the difficulty were distance from prenatal care and problems with transportation, cited by 6 of the 7 woman. One woman cited financial reasons in addition to distance and one cited the frequency of prenatal care visits.

Research Question 4. If Women With Adequate Attendance Experience Barriers to Care, How Were These Barriers Overcome?

One woman with transportation difficulties simply didn't attend all her appointments. Three women went in spite of the difficulty involved because they knew it was for the health of the baby. The remaining three had transportation problems and relied heavily on family and friends for rides, one woman only made appointments when she was sure her mother would be able to take her. The one woman who experienced financial problems applied for Welfare even though she didn't want to.

CHAPTER IV

DISCUSSION OF THE RESULTS

This chapter contains the discussion of the findings from this study. The findings will be related to the literature and the theoretical implications will be discussed.

Research Question 1: Are there demographic differences between women with adequate attendance at prenatal care, intermediate attendance and inadequate attendance?

There were no demographic differences which were statistically significant between women with different types of attendance. However, there were several trends which supported the literature reviewed. There were also some findings from this study which do not support previous findings.

For example, unlike other studies (Klein, 1971; Bruce, Petrie, Chao, Williams & Imaizumi, 1979; O'Brien & Smith, 1981; Simms & Smith, 1984) which found less attendance in older and/or younger women, there was no correlation among different age groups and attendance patterns in this study.

The majority of respondents in this study were white. However, the proportion of non-white respondents is higher than the number in the general population for

the State of Oregon. Although there was no statistically significant relationship between race and attendance, the trend in this study was for non-white women to have less attendance than white women. This finding corroborates the findings of similar studies (Klein, 1971; Oregon Dept. of Human Resources, 1986).

The sample was fairly evenly divided between those experiencing their first birth (44%) and those experiencing a subsequent birth (56%). There was no significant relationship between a woman's parity and her attendance pattern, although other studies have found better attendance among women experiencing their first birth and less attendance with subsequent births (Poland, Ager & Olson, 1987; Klein, 1971; Keeping, Chang, Morrison & Esler, 1980; Bruce, Petrie, Chao, Williams & Imaizumi, 1979; O'Brien & Smith, 1981).

The majority of women in this sample lived with someone (90%). The proportion of those who were married and lived with someone (46%) is about the same as those who were unmarried and lived with someone (44%). In this study, the trend was for those with adequate attendance to live with someone more often than those with other types of attendance. Other studies have revealed that those who are unmarried have less than

adequate attendance (Klein, 1971; Poland, Ager & Olson, 1987).

The literature also has correlated large household size with less than adequate attendance (Klein, 1971). There was no correlation in this study between household size and attendance except, as mentioned, where the woman lived alone. It is generally assumed that those who live alone are more isolated and have less social support which may contribute to lack of attendance.

The majority of this sample had incomes that fell below the level for Welfare eligibility for the State of Oregon (57.45%). Although no significant correlation existed between income and attendance, the trend showed that those with more income had better attendance. This has also been found by other others (Slatin, 1971; Klein, 1971; Bruce, Petrie, Chao, Williams & Imaizumi, 1979; Poland, Ager & Olson, 1987). Although the majority of women in this sample had their medical bills paid for by public funds, not all had adequate attendance. Obviously other reasons besides inability to pay for care affect the attendance of those with low income.

In terms of education, there were slightly more (54%) women who were high school graduates than not

(46%). However, only 2% of this sample completed 4 years of college. In terms of attendance those with more education had better attendance, although this result was not statistically significant. Other studies have had similar results (Klein, 1971; Joyce, Diffenbacher, Greene & Sorokin; 1983). The speculation can be made that those with more education have better employment opportunities alleviating financial barriers and may, through education, have a better understanding of the importance of preventive health care.

Most of the sample (66%) were employed in manual/service jobs while 30% had professional or skilled jobs. Four percent of the sample had no work history at all. In terms of attendance, all of those with no work history were found in the inadequate attendance group. The findings also showed that the more skill one's employment required, the better attendance one had. This had also been documented in the literature (Joyce, Diffenbacher, Greene & Sorokin, 1983; O'Brien & Smith, 1981).

The literature has demonstrated that illicit drug use is generally correlated with less than adequate attendance (Bruce, Petrie, Chao, Williams & Imaizumi, 1979; Poland, Ager & Olson, 1987). Those women who admitted using drugs in this study included a broad

spectrum of type of user. The spectrum ranged from those addicted to crack/cocaine to those who occasionally smoked marijuana and stopped when their pregnancy was confirmed. This may explain the lack of a significant correlation between level of attendance and drug use. Another factor influencing results on this item may be the unreliability of a drug use history.

Due to Human Subjects criteria, respondents could not be interviewed directly about their drug use. Information could only be taken from their chart. For this reason, no detailed information on drug use could be asked of subjects limiting investigation in this area.

Infant characteristics.

Like other studies which correlated inadequate attendance with low Apgar scores (Sokol, Woolf, Rosen & Weingarden, 1980; Bruce, Petrie, Chao, Williams & Imaizumi, 1979; Klein, 1971), this study found the lowest mean 1 minute Apgar score to be in the inadequate attendance group. The highest 1 minute Apgar score was found in the intermediate attendance group.

The lowest mean birthweight, like other studies (Sokol, Woolf, Rosen & Weingarden, 1980; Bruce, Petrie, Chao, Williams & Imaizumi, 1979; Klein, 1971; Chamberlain, 1976; Donaldson & Billy, 1984; Mundinger,

1985; Institute of Medicine, Committee to Reduce Low Birthweight, 1985), was in the inadequate attendance group. Unlike other studies the highest was in the intermediate attendance group.

The lowest mean gestation length was in the inadequate attendance group at 36.6 weeks. The adequate attendance group had the highest at 41.13 weeks. These findings support other studies which correlate inadequate attendance with prematurity (Bruce, Petrie, Chao, Williams & Imaizumi, 1979; Klein, 1971; Chamberlain, 1976; Donaldson & Billy, 1984; Institute of Medicine, Committee to Reduce Low Birthweight, 1985).

Research question 2. What are the reasons for the different attendance rates among the three groups of women in this study?

In this section there were a number of statistically significant findings, which in general supported the findings of other studies on this subject. There were many findings which had no statistical significance, although they did reveal trends which generally supported the findings in the literature. There were a few cases where a finding did not support the literature.

The categories probed in this section were (a) the woman's attitude towards her pregnancy, (b) the amount of perceived support from family, friends, HCP and other supportive services, (c) satisfaction with care received and (d) barriers to attendance.

Attitudes Towards Pregnancy and Prenatal Care

In terms of the initial attitude of the woman to her pregnancy, the trend was for those who were pleased to have better attendance. This supports the theory that women who are happy about their pregnancies are more invested in them and will therefore have better attendance at prenatal care.

At the outset of the study it was assumed that if a woman told her partner of the pregnancy first it would be considered an indicator of better social support than if she told no one or a friend/family member first. The findings showed that many women with adequate attendance and good support told a relative or friend first and not the father of the baby or partner, although in the sample as a whole more women with adequate attendance told the father of the baby first than did the other groups.

The reason many women with adequate attendance disclosed the pregnancy to someone other than the father of the baby first was because a relative or

friend had been with them when the pregnancy was confirmed, usually because the father of the baby was at work. Therefore, the assumption that a woman had better support if the father of the baby or current partner was told first is not necessarily valid.

However, the data also showed that those who told no one of the pregnancy or waited a long time to do so were more often in the intermediate and inadequate attendance groups. It might be assumed that these women have less social support, which can be a factor in less than adequate attendance.

More women with adequate attendance told both the first and second person of the pregnancy sooner than those with intermediate and inadequate attendance. This finding supports the finding of Poland, Agar & Olson (1987). It can be assumed that the sooner a woman tells others of her pregnancy the better her social support, which may be associated with better attendance.

When examining the initial reaction of the first and second confidantes, the trend was for those who remembered receiving positive advice to have better attendance. Those who received no advice or negative advice, such as " You better not have anymore" or "Why don't you get an abortion?" were concentrated in the less than adequate attendance groups. This item also

supports Poland, Agar & Olson (1987) who correlated better support with better attendance.

When asked about why they began care when they did the findings demonstrate that more women with adequate attendance began care because they were concerned about their health. There were more women with intermediate attendance in the group that cited low cost as a reason for beginning care while those with inadequate care were more often referred by the lab than the other 2 groups. The hypothesis can be made that those who are more concerned about health attend prenatal care more adequately than those who are more concerned about finances. It is interesting that those with inadequate attendance began care more often because they were told to do so by someone else. It may be that those with better attendance appear to be motivated by internal factors and those with less than adequate attendance by external ones.

Health Care Providers

Information regarding the type of health care provider (HCP) seen by a woman showed that those who saw a nurse-midwife or a nurse practitioner had better attendance than those who saw a medical doctor, although this difference was not statistically significant. Of all three types of HCPs, nurse-midwives

saw women who had the best attendance. There are reports in the literature (Norwood, 1982; Piechnik S., & Corbett, M., 1985; Levy, B., Frederick, W. & Marine, W., 1971; Ross, 1980) of nurse-midwives having clients with better attendance than medical doctors. This has been attributed to the more personal interactive style of nurse-midwives when compared to obstetricians.

All women found their primary HCP to be helpful. However, those who had adequate attendance more often found their primary HCP very helpful when compared to other groups. This would support the hypothesis made by O'Brien & Smith (1981) and Poland, Agar & Olson (1987) which suggests that a woman's attendance at PNC would be better if she were satisfied with those that care for her.

This study found that those who rated the attitudes of the support staff at prenatal care as positive had better attendance than those who didn't. This correlates with the above findings concerning primary HCP and again supports the assumption that if a woman felt her HCP had a positive attitude she would enjoy her visits and would attend regularly. This finding also supports those studies which showed that a negative attitude by a HCP contributed to a woman's disinterest in attending (Poland, Ager & Olson, 1987).

Professional Support Services

There was a statistically significant positive correlation between visits to a nutritionist and type of attendance. Although the majority of women did not see a nutritionist, those who did were concentrated in the adequate attendance group. No woman from the inadequate attendance group saw a nutritionist. It is unclear if women who were on the Womens', Infants' and Childrens' (WIC) supplemental food program counted the intake interview as a visit to a nutritionist or not. Knowledge of this could change the findings. This trend supports the findings of studies that showed better attendance and better outcomes by women who had a comprehensive prenatal visit which included nutrition counseling and other supportive services (Children's Defense Fund, 1988; American Nurses' Association, 1987; OB Access Pilot Project, 1984; Sokol, Woolf, Rosen & Weingarden, 1980; Herron, Katz & Creasy, 1982).

One may hypothesize that those with inadequate care did not see a nutritionist because they were not seen by anyone or not seen enough and therefore not referred. Another explanation is that those with inadequate attendance who were seen at prenatal care and who might have been referred did not go for the

same reasons that kept them from attending PNC regularly.

Of those who saw a nutritionist 11 (68.75%) saw him/her at the same site where they received prenatal care while 5 (31.25%) saw the nutritionist away from their prenatal care site. The majority of women in this study who saw a nutritionist saw him/her at their prenatal care site than elsewhere. Whether this is because they are referred more often if there is a nutritionist on site or their compliance is better if care is given at the same site is unknown. It has been documented in the literature that women have better pregnancy attendance when they are able to access more than one service at the same site (American Nurses' Association, 1987; Elster, Lamb, Tavare & Ralston, 1987; Piechnik, & Corbett, 1985)

The majority of women who saw a nutritionist found him/her to be helpful and the trend was for those who found the nutritionist to be helpful to be concentrated in the adequate attendance group than in the other groups. This again supports studies which find better attendance among women who are more pleased with the care received.

More women in the intermediate attendance group saw a social worker than did women in the other 2

groups. This may be because those with adequate attendance more often have the resources they need to access care without additional assistance. Likewise, those with inadequate attendance may have had better attendance had they received the additional support which can be provided by a social worker.

Perhaps the inadequate attendance group did not access the resources of a social worker for the same reasons that kept them from attending prenatal care adequately. The hypothesis can also be made that had those in the intermediate attendance group not had the additional support of a social worker, they may also have had inadequate attendance. It is unclear if women believed that the intake person who determines eligibility for the State of Oregon's prenatal care assistance program was a social worker, which may confound the results of this item.

Barriers

Of those women who needed to find a sitter only one had a problem doing so and she had intermediate attendance. This does not support the literature which found lack of childcare to be a significant contributor to a woman's lack of prenatal care attendance (Slatin, 1967; Klein, 1971; Joyce, Diffenbacher, Greene & Sorokin, 1983; O'Brien & Smith, 1981).

In the present study, most women brought their children with them, made appointments when they were in school or had relatives, friends and/or neighbors with whom they could leave their children. However, those who did not need childcare were concentrated in the adequate attendance group. Perhaps in Oregon there are more women who are willing to baby-sit for their friends and relatives than in other parts of the country, or bringing children to prenatal care is not frowned upon.

A very small number of women (4) felt that prenatal care conflicted with their attendance at work or school, unlike other studies which found this to be a significant barrier to care, especially in terms of the availability of appointments during non-work hours or the ability to get time off from work to attend (Slatin, 1976; Klein, 1971).

There were no women in the intermediate attendance group who felt prenatal care conflicted with work or school. However, of those who felt it did not conflict with work or school, the majority were concentrated in the adequate attendance group. This indirectly supports the hypothesis that better attendance is achieved by those who do not have conflicts between

prenatal care appointments and work or school schedules.

More women who found the site of prenatal care to be convenient had adequate attendance which supports the hypothesis that convenient clinic sites contributes to attendance. Those who found it inconvenient were evenly distributed among groups.

Of those who missed no appointments, the majority was found in the adequate attendance group. Of those who did miss appointments, there were an equal number in the adequate and intermediate attendance groups. The inadequate attendance group missed the least number of appointments. This may be because the inadequate attendance group did not make appointments and therefore had none to miss.

However, these findings may not portray the actual potential for missed appointments and its correlation with attendance. This is because there were several weeks in Portland this winter where severe weather conditions caused many clinics to close. Even if clinics were open, many women found it too dangerous to travel. Many women claimed having missed an appointment due to the weather.

In assessing the reasons for missed appointments, it was found that transportation affected more people

in all attendance groups, but affected those in the adequate attendance group the most. Forgetting to go and choosing to stay home with a husband who had been away were factors that only affected the adequate attendance group. Illness and weather conditions were reasons most often cited in the intermediate attendance group. Only those with less than adequate attendance were affected by being too busy, being turned away because there was no HCP available and being turned away because of lateness.

It is interesting that those with less than adequate attendance were affected most often by factors imposed on them by others or conflicting responsibilities, such as being turned away due to lateness or lack of HCP and "too busy". The adequate attendance group, although most often affected by transportation, also had the only 2 women who missed appointments due to personal choice; forgetting and staying home to be with a husband who had been away.

The findings from this study concerning transportation barriers support the findings of other studies which found transportation to be a significant barrier to prenatal care attendance (American Nurses' Association, 1987; Slatin, 1967; Klein, 1971; O'Brien & Smith, 1981; Poland, Agar & Olson, 1987). In this

study there was a statistically significant correlation between type of transportation used to get to care and attendance. Those who used more expensive means of transportation had better attendance as did the women in the study by Poland, Agar & Olson (1987).

There was a significant correlation between cost of transportation and attendance which has been found in other studies (Poland, Agar & Olson; 1987). Those who paid more for transportation were concentrated in the adequate attendance group, while those who paid the least were evenly distributed among the inadequate and adequate attendance groups.

In the adequate attendance group these findings may show that those with the money to pay for transportation were able to eliminate transportation as a barrier. It may also show that those who were able to get to prenatal care without having to pay for it did not experience transportation costs as a barrier. The fact that more women with inadequate attendance paid the least for transportation may be due to a lack of money to get to care. On the other hand, this group may have experienced other barriers which prevented them from attending prenatal care and ultimately resulted in less being paid for transportation to care.

Type of transportation to the hospital when in labor was also questioned. There was no statistical correlation between type of transportation in labor and attendance. Although more women in all attendance groups were driven to O.H.S.U. in labor by a friend/relative, a greater proportion of women who came by other means had inadequate attendance when compared to the sample as a whole.

The "other" means of arrival in labor included taxi, ambulance and driving self. Three who came by other means had inadequate attendance; one came by taxi and two came by ambulance. Of the two with inadequate attendance who came by ambulance, one had been living in a crack house and had delivered a 27-week-gestation infant at home 30 minutes after smoking crack cocaine. Two women using other means of transportation had intermediate attendance; one took a taxi and one took a bus. Of the two with adequate attendance, one drove herself and the other came by taxi.

This may again indicate availability of social support as a predictor of adequate attendance. Those who were driven by their partner, a friend, or a relative obviously can count on these people for transportation and they tended to have better attendance. It is unclear if those who arrived by

"other" means could count on others for a ride. The trend was for them to have less than adequate attendance.

Although not statistically significant, those women without any type of medical coverage tended to have less than adequate attendance when compared to women with some type of coverage, and those with private insurance more often had better attendance than the other groups. This finding supports numerous studies in the literature (Poland, Agar & Olson, 1987; Slatin, 1967; Klein, 1971; Bruce, Petrie, Chao, Williams & Imaizumi, 1979) which found less than adequate attendance in those women with no means to pay for care and better attendance in those who could afford care or who were covered by insurance.

Surprisingly, this study revealed that many women who were covered for medical expenses through Medicaid still had less than adequate attendance. This supports the assumption that there are other barriers aside from cost which affect attendance.

When examining the amount of time that elapsed between initial contact with a health care agency and the first appointment by using ANOVA, those with inadequate attendance had the shortest wait. These results may indicate that health care providers were

more anxious to give an appointment sooner to a woman who was in her third trimester and hadn't been seen, while there wasn't the same urgency with a woman calling for an appointment in her first trimester.

Expenses

Those who paid less for prenatal care more often had inadequate attendance than the other groups. This may be revealing that those with private insurance had jobs and therefore an income which would allow them to pay out-of-pocket for things such as infertility work-ups and high risk care, not covered by insurance. It also suggests that those who paid less for care probably did so because they could not afford it.

This second hypothesis supports the finding that showed those with less income had less attendance, in spite of the availability of public assistance. Since money is needed for other pregnancy related costs aside from medical care, such as transportation and medicines. Another interpretation is that those with inadequate attendance paid less because they faced other barriers to attendance, did not attend and therefore had fewer bills associated with attendance.

Cost of medicines was examined separately from cost of medical care. Although not statistically significant, those who paid more for medicines had

better attendance. Previous findings showed that those with the best attendance had private insurance and private insurance does not usually cover medicines. The most frequently purchased medicines were iron and vitamins.

Many women began taking iron and vitamins on their own, as soon as they were knew they were pregnant, even if they weren't yet in prenatal care. Women on the Poverty Level Medicaid program (PLM) receive medicines free. Therefore those who would eventually have Medicaid or PLM might have bought their first medications over-the-counter with their own money, but once covered used prescriptions to obtain medications with no cost to themselves.

Attitudes

There was a statistically significant correlation between attendance and belief in the importance of prenatal care. The more important a woman felt prenatal care to be, the better was her attendance. This supports the finding by Poland, Agar & Olson (1987) which demonstrated that better attendance was made by those who felt prenatal care to be important. These authors agreed that it is probably more difficult to change women's attitudes than to change the delivery of prenatal care. They suggest making prenatal care more

enjoyable and accessible which would ultimately change women's attitudes as they saw both their physical and psychosocial needs being met.

In order to know why women felt prenatal care to be important or unimportant they were asked to explain their answers to the above. All women responded. These findings show that the inadequate and intermediate attendance groups were more apt to cite, "prevent a bad outcome/insure a good outcome" as reasons for the importance of prenatal care while the adequate attendance group was more apt to cite, "monitor the pregnancy". It is unclear if there is anything significant in this as both answers are quite similar. However, there were no women from the inadequate attendance group who mentioned "monitor the pregnancy" as a reason for prenatal care.

The inadequate attendance group was also overrepresented (60% of the total) in the group that gave reasons explaining why prenatal care was not important or only somewhat important. The reasons why women felt prenatal care to be unimportant fell into the following 4 categories: (a) it is only important with the first pregnancy (1 respondent, inadequate attendance); (b) it is only important at the end of the pregnancy (2 respondents, both with inadequate

attendance); (c) I felt o.k. until I went to the doctor (1 respondent, intermediate attendance) and (d) it is only important for an older woman (1 respondent, adequate attendance, 34 years old). The woman who said it was only important with the first pregnancy was experiencing her fifth pregnancy and had received no prenatal care. These responses support the findings of Poland, Agar & Olson (1987) and others concerning why women felt prenatal care to be unimportant.

There was no significant relationship between amount of information received about pregnancy from friends and attendance. Nevertheless, the adequate attendance group received more information from friends than did other groups. In the inadequate attendance group, there was no one who had received information about pregnancy from friends. The adequate attendance group also received more information about pregnancy from their relatives than did other groups. This finding supports the assumption that women with adequate attendance are more apt to have a better social support network than those with less than adequate attendance.

The inadequate attendance group proportionately had more women who stated they had received a lot of information from health care providers/clinics. It

might be assumed that this is because they received little or no information about pregnancy from friends and/or families because their social support was weak or because health care providers, aware of deficits in social support in this group, attempted to compensate by providing more time teaching this group than they did other groups.

There were no statistically significant correlations between attendance and information about pregnancy from books and pamphlets, childbirth education classes and previous pregnancies. However, 94% of the sample received some information from books and pamphlets. This finding makes it clear that free booklets and pamphlets are a necessity for every prenatal care waiting room.

As an indicator of social support women were asked who came with them in labor to the hospital. This item approached statistical significance ($P<0.065$). The only women with no support in labor, aside from hospital personnel, were women who had inadequate attendance. Most women had the father of the baby with them. The adequate attendance group more often had the father of the baby with them than other groups. These findings support the theory that associates social support with better attendance. Availability of support in labor may

be an indicator of social support which has been correlated with attendance in this study and by Poland, Agar & Olson, (1987).

Multiparous women were asked if they had seen a HCP with their first and, where applicable, second pregnancies. They were also asked if they found their HCP helpful in order to ascertain the relationship between previous contact with a HCP and attendance in this pregnancy. There was a statistically significant correlation between attendance in the first pregnancy and attendance in this pregnancy ($P<.046$). All of those who had not seen a HCP in the first pregnancy had inadequate attendance in this pregnancy. There was one women who saw no HCP with her second pregnancy and she had inadequate attendance in this pregnancy.

Those who did see a HCP in the first and second pregnancies were concentrated in the adequate and intermediate attendance groups. There was no statistical correlation between perceived helpfulness of the first and second HCP and attendance in this pregnancy. However, those who rated these providers as unhelpful were more likely to have either inadequate or intermediate attendance in this pregnancy and those who rated them helpful or very helpful were more likely to have either intermediate or adequate attendance.

Perhaps Poland (1987) is right when she states that there is much that a HCP can do to influence how prenatal care is presented so it can be a positive experience for women leading to their willingness to attend.

Discussion Of Other Findings

To ascertain how women became aware of their pregnancies the interviewer asked them to describe how they first knew they were pregnant. The responses ranged from the subjective "had a feeling" to the objective "positive pregnancy test." Thirty-two percent of the sample responded with more than one response.

Missed period was mentioned most frequently as a reason. The next most frequently mentioned reason was a tie between "feeling sick" and "had a feeling", both with 18%. Positive pregnancy test was next in frequency with 8%. Other reasons were "weight gain" (4%), emotional changes (4%), tired (4%), planned pregnancy (4%), following basal body temp. and temp. stayed up (4%), "condom broke" (2%), "stopped pill" (2%) and milk supply decreased (2%).

Interestingly, whereas 65% of those with adequate care and 82% of those with intermediate care claimed missed period either alone or in tandem with another reason, only 20% of those with inadequate care did so.

This shows that women with inadequate attendance were less likely to mention missed period. This may reflect a general lack of awareness of their bodies and/or denial of the pregnancy. Those with inadequate care claimed feeling sick (20%), positive pregnancy test (20%), had a feeling (20%) and weight gain (10%).

Women were asked what they felt were the important things that HCP could do for them during their pregnancy. Five categories emerged. They were (a) educate and inform about what is happening; (b) help the woman to stay healthy; (c) reassure; (d) perform practical functions such as taking blood pressure, listening to baby's heart beat, and doing blood tests; and (e) listen to the woman.

Interestingly, education about pregnancy is represented by the adequate and intermediate attendance groups and contained the majority of responses. However, no one with inadequate attendance cited education as an important function of HCPs. Listening to the woman is more represented by the inadequate and intermediate attendance groups. Could it be that the inadequate attendance group feels like they do not get listened to and that the adequate attendance groups want more from PNC than a weight and blood pressure?

Obviously, education and information are very important to many women in this sample, much more so than practical tasks. Health care providers would do well to make sure they provide time for patient education, patient reassurance and listening to what women have to say. One woman put this eloquently. She said, "If the woman feels something is wrong but the tests don't, they (HCP) still need to pay attention to what the woman says." Another said, "They should explain everything step by step so the women won't be afraid."

When asked what they thought hospitals and HCP could do to make attending prenatal care easier eleven categories emerged with responses ranging from nothing to very practical suggestions. Interestingly, the majority of women found everything to be fine right now and that there was nothing more to do. However, there was only one woman from the inadequate attendance group who cited this.

The majority who found everything to be fine right now had adequate attendance. This makes sense since fewer women who attended adequately confronted barriers to attendance. Cost was the next most frequently cited response and the intermediate and adequate attendance groups predominated here. Because so many women had

received assistance from the P.L.M. program, many may not have had any barriers once the financial barrier was removed.

The category which contained the most women with inadequate attendance was the unsure category. Perhaps this group is so overwhelmed with life problems or face so many barriers they cannot think of where to begin to change them. Another explanation is that they really do not think that much about health care and therefore had no response for what important things health care providers could do.

Interestingly, the more adequate care a woman had, the less frequently she mentioned things which might affect her directly. Rather, she would mention items in relation to how they might help others. Contrarily, this group also spoke more often in a derogatory way of those women who did not attend than did women from other attendance groups. The adequate attendance group also more often thought that prenatal care should be more personal perhaps because they did not have to struggle as much for basic necessities and could therefore turn their attention to the niceties of care.

Research Question 3. Do women with an adequate number of visits ever encounter these or other barriers?

The majority of women in this sample with adequate attendance experienced no difficulty attending. Therefore, it can be concluded that, in this sample, if a woman had adequate attendance, she usually did not experience difficulty attending. Of the women with adequate attendance who experienced difficulty attending, the most frequently cited reasons for the difficulty were distance from prenatal care and problems with transportation, cited by 6 of the 7 woman.

It is assumed that distance from prenatal care constitutes a problem with transportation and also of time involved. One woman cited financial reasons in addition to distance and one cited the frequency of prenatal care visits. This supports the findings concerning transportation in this study as well as others previously mentioned. Transportation continues to pose barriers for many women attending prenatal care.

Research Question 4. If barriers were encountered by the adequate attendance group, how were they overcome?

One woman didn't attend all her appointments. Three women went in spite of the difficulty involved because they knew it was for the health of the baby. The remaining three relied heavily on family and friends for rides; one woman only made appointments when she was sure her mother would be able to take her.

These findings support the findings of Poland, Agar & Olson (1987) concerning both womens' perceived importance of prenatal care and the importance of a social support network to adequate prenatal care attendance. Three women experiencing transportation difficulties were motivated to attend prenatal care because they considered it important for the health of the baby. Three others had a social support network which provided tangible support in the form of transportation (although the women had to make appointments when these rides were available). The one woman who experienced financial problems applied for Welfare even though she didn't want to.

Chapter V

Conclusions

Summary

Lack of adequate attendance at prenatal care is a problem in this country. It crosses regional, racial and socioeconomic boundaries. Many barriers influence attendance at prenatal care. The purpose of this study was to determine what barriers were identified by a recently delivered sample of women in Portland, Oregon that prevented them from receiving an adequate amount of prenatal care. In addition, this study sought to determine how women who experienced barriers, yet had adequate prenatal attendance, overcame these barriers.

The conceptual framework upon which this study was based came from an extensive review of the literature on barriers to prenatal care attendance. The demographic barriers to adequate attendance identified in the review included non-white race, multiparity, single marital status, large family, low income, undereducated, at extremes of the age continuum, drug abuse and no work history. In addition, studies which interviewed women themselves about the barriers they encountered in attending prenatal care identified the following situational barriers: lack of childcare, lack of finances and/or insurance, conflicts with work,

unaware of services available, transportation problems, fear, time involved, unaware of benefit, unaware of pregnancy, dislike of doctors, shame, unwanted pregnancy, alternative delivery planned, healthy previous pregnancy, depressed, unavailability of appointments, long waits to be seen and lack of social support.

Four research questions were formulated:

1. Are there demographic differences between women with adequate attendance at prenatal care, intermediate attendance and inadequate attendance?

2. What are the reasons for the different attendance rates between the three groups of women in this study?

3. Do women with an adequate number of visits ever encounter these or other barriers?

4. If barriers were encountered by the adequate attendance group, how were they overcome?

The sample consisted of 50 women who were divided into three attendance groups: adequate, intermediate and inadequate based on a combination of both number of visits and gestation in which prenatal care began. Those with care beginning in the first trimester and greater than 7 prenatal visits were included in the adequate attendance group. Women who began care in the

second trimester or began in the first trimester but only had 4-7 visits were included in the intermediate attendance group. Women who began care in the third trimester or had 1-3 visits regardless of trimester in which care began were included in the inadequate attendance group.

Women were interviewed in the hospital during their immediate postpartum course. The sample was primarily white, lived with someone else, had a mean monthly income below the cutoff for eligibility for Welfare benefits from the State of Oregon ($740.00 for a family of three), had less than a high school education, were employed largely in manual/service jobs, and did not use illegal drugs.

Data were collected by means of a personal interview using a questionnaire developed by Poland (1987; Appendix A) and modified for ease in transferring the data to computer (Appendix B). In general the findings supported the existing data on barriers to prenatal care attendance with some exceptions.

There were 6 statistically significant findings which supported the literature on barriers to attendance and there were many trends. The statistically significant findings include the

following (a) those with adequate attendance were more likely to tell a second person about the pregnancy sooner than women in the other 2 groups, (b) women who saw a nutritionist had better attendance than those who didn't, (c) more expensive means of transportation to care were used by those with adequate attendance more often than those with inadequate or intermediate attendance, (d) those with adequate attendance spent more on transportation than those with inadequate or intermediate attendance, (e) women who felt prenatal care to be important were more likely to have adequate attendance than those who didn't and (f) multiparous women who saw a health care provider with their first pregnancy were more apt to have adequate attendance in this pregnancy than multiparous women who didn't.

Aside from statistically significant data, the trends in this study demonstrated that white women, who were better educated, with professional jobs, had income above the eligibility level for Welfare from the State of Oregon, and a better social support network had better attendance at prenatal care. Women with better attendance were also more pleased about the pregnancy and more satisfied with the care they received than others. These trends are supported in the literature.

There were 4 findings from this study which contradicted the literature, although they did not reach statistical significance. First, most women in this sample did not have a need for childcare while they attended prenatal care, and those who did, did not have a problem finding it. Second, there were fairly equal numbers of those admitting to illegal drug use in all three attendance groups, although type of use differed. Third, household size was fairly consistent among the different attendance groups, although the literature has shown that those with a larger family size attend less. Finally, the mean age of the women in all three attendance groups was the same, while other studies have found that those on either end of the age continuum attend less.

Thirty percent of the women with adequate attendance (n=6) admitted to experiencing barriers to care. Of those who did, the most frequent barrier was transportation. There were 2 other barriers mentioned, low finances and the frequency of visits. Most women overcame these barriers because of a personal belief that prenatal care was important for the health of the baby. In addition, they had family or friends on whom they could rely for transportation, although they had to make appointments around the schedules of these

people. The one woman who experienced financial barriers applied for welfare although she really didn't want to.

These findings demonstrate that transportation is an important barrier to care. It also shows that a personal belief in the importance of prenatal care as well as the amount of social support a woman has are important determinants of attendance at prenatal care in spite of the presence of barriers. Women who did not believe prenatal care was important and who lacked a social support network failed to attend as often as those who did.

Limitations

There are several limitations to this study. Because this sample was not a random sample, over and under-representation of certain items may have occurred. The size of the sample is also a limitation. With a larger sample, there would have been better representation and larger cell sizes. This would possibly have resulted in greater statistical significance on certain items which at present only approached significance. The homogeneity of the sample (all women who delivered at the same hospital) limits generalizability to diverse childbearing populations

and to other regions. In addition, there was only one woman who had no prenatal care visits. This limits the information obtained from this particular group.

Methodological considerations include the ex post facto design. In addition there is no reported reliability or validity for the questionnaire used.

Implications for Nursing Practice

This study demonstrates several areas in both womens' lives and in the delivery of health care which could be altered to improve attendance at prenatal care and include transportation, social support, womens' attitudes about the importance of prenatal care, nutritional support, and the quality of the care given. Those areas which nurses can be involved in changing will be discussed in this section.

First of all, nurses, nurse-midwives and nurse practitioners who come in contact with women during the childbirth period must be prepared to act as patient advocates. This involves a willingness to listen to women and respect their beliefs; educate women concerning care of self and fetus; be a source of referral for those women needing Welfare, nutritional support and social service assistance; and be prepared to offer individualized care.

Although many barriers such as lack of finances and lack of transportation have been associated with lack of attendance, nurses cannot be expected to provide these directly. However, nurses can talk with women about their transportation and financial needs and refer women to the proper agencies/sources where these needs can be met.

Furthermore, nurses can be willing to work in the administrative level, either directly or indirectly to influence both government and hospital policies which help alleviate the barriers many women experience in attempting to access care. For example, it appears that women who saw a nutritionist had better attendance rates than those who didn't. This may be due to visits to Women, Infants and Childrens' nutritional support services or it may be due to referrals to a regular nutritionist for other reasons. Perhaps every woman at risk for inadequate attendance should be referred to a nutritionist. Clinics which have nutritionists available on site would provide this service while decreasing further transportation barriers.

Nurses at the administrative level can be alert to the recognized barriers women face and strive to get the money and backing to put programs into effect which alleviate these barriers. On-site childcare, vouchers

for bus fare, and hiring enough staff to provide care are examples.

Nurses can also help women recognize areas in their lives which might prevent them from attending adequately. For example, they could inform women of the availability of bus vouchers. Perhaps nurses could hand them out at clinic, rather than making women make another trip to the Welfare office to pick them up. Nurses could also assist women to recognize the social supports they have but are just not aware of. For example, perhaps a neighbor or relative would not mind driving a woman to clinic. Women may need assistance in exploring these options.

Changing womens' attitudes about the importance of prenatal care could be accomplished by radio or television announcements advertising its importance. Nurses could also discuss its importance at prenatal visits. Nurses can assist a woman in finding time for prenatal care by calling employers who make it difficult to get time off. When women feel cared for at prenatal visits, not only do those caring for her become part of her social support but it is possible that her attitudes towards the importance of prenatal care may change for the better as well.

Recommendations for Future Research

Recommendations for future research include the need for replication of this type of study with a larger sample and in diverse settings. In addition, more research is needed on the association between "soft barriers", such as social support and womens' attitudes to prenatal care, and attendance at prenatal care.

Replication of this study is warranted due to the aforementioned homogeneity of the sample and the small sample size. There is also a need for studies of this type to take place in different areas of the country to account for regional and ethnic differences in womens' attendance patterns.

This study has supported the theory that social support and womens' attitudes concerning the importance of prenatal care are important determinants of attendance. Yet these items have not been given the attention in the literature that "concrete" barriers such as lack of transportation and low finances have.

However, these two variables, social support and womens' attitudes, may be more influential in attendance than lack of transportation or low finances. As this study showed, the majority of women, from all attendance groups, received Medicaid and those who

found lack of transportation a barrier were able to come if they had others they could rely on for transportation. This demonstrates that it is not always inability to pay or lack of transportation that keep women from receiving care. It appears that intervening factors may be social support and the importance a woman places on prenatal care, for her own health and that of her baby.

Social support and womens' attitudes to care need to be investigated in order to add greater understanding to the phenomenon of lack of attendance at prenatal care. They also need to be investigated in order to develop interventions to increase attendance.

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Appendix A

PRENATAL INTERVIEW

WOMEN OFTEN RECEIVE HELP FROM MANY DIFFERENT PEOPLE DURING THEIR PREGNANCIES. WE WOULD LIKE TO KNOW SOMETHING ABOUT THE PEOPLE WHO HELPED YOU DURING YOUR PREGNANCY AND HOW YOU FELT ABOUT THEIR HELP.

THINK BACK TO EARLY IN THIS PREGNANCY.....

1. When did you first think you might be pregnant? _____ month

   How did you know? (Probe: body changes, tests, doctor, dream, others knew, etc)

2. When you first thought you might be pregnant, how did you feel about it?

3. a) Who did you tell first? _____ When? _____ month

   How did this person react? _____

   What advice? _____

   b) Who did you tell second? _____ When? _____ month

   How did this person react? _____

   What advice? _____

4. While you were pregnant, who did you see about your health? (Probe: doctor, nurse, nutritionist, social worker, minister, healer, pharmacist, etc)

WHO/WHERE	MONTH BEGAN	WHY (HOW KNOW WHEN START?)	# TIMES	HOW HELPFUL

5. What arrangements did you have to make to see any of these people? How much trouble was each?

   A. transportation (usual)

   B. insurance

   C. sitter

   D. job/school

   E. other

6. How long did you have to wait to see them? How much problem:
   A. get appointment after called

   B. wait in office to see doctor

7. How did you feel about the place(s)?
   A. location

   B. size

   C. attitudes

   D. know what they were doing?

8. How much did it cost you each time to see these people?
   A. transportation

   B. sitter

   C. medical bills

   D. medicines

   E. other expenses

9. Did you have to miss or cancel any of your appointments? If yes, why?

10. Were there any people you wanted to see about your pregnancy but could not for any reason? (Probe: what people, and why couldn't you see them?)

11. How important do you think it is to see a doctor or nurse when you are pregnant?
    A. Why is it important/not important?

    B. What are the most important things the doctors (or clinic) can do for you?

12. Women learn about pregnancy from many sources. How much information did you get from the following?
    friends
    relatives
    school
    clinics/doctors
    previous pregnancies
    books/pamphlets
    pregnancy classes
    any other sources?

WE ARE ALSO INTERESTED IN YOUR EXPERIENCES WHEN YOU WENT INTO LABOR.

13. When did you first suspect you were in labor (or needed to come to the hospital?)

14. How did you know you needed to come to the hospital? (Probes: who did you tell, what advice did you receive?)

15. How did you know about Hutzel Hospital?

16. What arrangements did you make to come to the hospital? How did you get here?

Anyone come with you?

How long did it take?

17. How helpful were the people here? (Probe each: doctors, nurses, clerks, others. Other probes: what happened? How did they make you feel, etc?)

18. If you were pregnant before, did you see a doctor during your pregnancy?

		Saw Dr When? (mo. gest)	How Often	Where was Dr? (hosp, office)	How Helpful?
A.	1st preg				
B.	2nd preg				
C.	3rd preg				
D.	4th preg				
E.	5th preg				
F.	6th preg				
G.	7th preg				
H.	8th preg				
I.	9th preg				
J.	10th preg				

19. What do you think doctors or hospitals could do to make it easier for pregnant women to receive medical care?

Appendix B

1.ID_____

2.AGE____

3.RACE 1.W, 2.B, 3.H, 4.NA, 5.O

4.PARITY

5.MAR STA 1.SA 2.SW 3. MA 4.MW

6.NO. LIV CHILDREN

7. SIZE HSLD

8. MONTHLY INCOME

9. % POVERTY

10. YEARS EDUC.

11. WORK HX
1 NO HX
2.MANUAL
3.SERVICE
4.CLERICAL
5.SKILLED
6.PROFESSIONAL
7.ARTS
8.OTHER

12. USE ILL DRUGS 1. NO 2. YES

13. BIRTHWGT

14. APGAR 1
1. 0-3
2. 4-6
3. 7-10

15. APGAR 5
1. 0-3
2. 4-6
3. 7-10

16. EDC DOB WKS GEST.

17. NO PNC VISITS (FROM CHART)
1. 0-3
2. 4-7
3. 8 AND ABOVE

18. TRIM PNC BEGAN (FROM CHART)
1. 3RD
2. 2ND
3. 1ST

19. AD AMT OF VISITS

1. INAD
2. INTERM
3. AD

20. QUAL: IF AD ATT., ANY DIFF ATTENDING?
1. NO
2. YES

21. QUAL: IF DIFF, HOW OVERCOME?
1. NO DATA
2. YES DATA

22. DELAY IN TELLING OTHERS

ASK THINK BACK TO EARLY IN THIS PREGANACY:
WHEN DID YOU FIRST THINK YOU MIGHT
BE PREGNANT? MOS_____

1. NEVER TOLD
2. > 8 WEEKS
3. 5-8 WEEKS
4. 3-4 WEEKS
5. 1-2 WEEKS
6. IMMEDIATE

23. HOW DID YOU KNOW YOU WERE PREGNANT
1. YES DATA
2. NO DATA

24. WHEN YOU FIRST THOUGHT YOU WERE
PREGNANT HOW DID YOU FEEL ABOUT IT?
1. DISPLEASED
2. AMBIVALENT
3. PLEASED
4. OTHER

25. WHO DID YOU TELL FIRST?

WHEN DID YOU TELL? MOS _____

1. NO ONE
2. FREIND
3. RELATIVE
4. FOB
5. OTHER

26. INITIAL ATTITUDE OF FIRST TOLD

1. DISPLEASED
2. AMBIVALENT
3. PLEASED
4. OTHER

27. ANY ADVICE FROM IST TOLD?
WHAT ADVICE?

1. YES DATA
2. NO DATA

28. WHO DID YOU TELL SECOND?

1. NO ONE
2. FREIND
3. RELATIVE
4. FOB
5. OTHER

29. WHEN DID YOU TELL THIS PERSON? MOS_____

(SEE MOS SUSPECTED PREG FROM 22 ABOVE)

1. NEVER TOLD
2. >8 WEEKS
3. 5-8 WEEKS
4. 3-4 WEEKS
5. 1-2 WEEKS
6. IMMEDIATE

30. HOW DID THIS PERSON REACT?

1. DISPLEASED
2. AMBIVALENT
3. PLEASED
4. OTHER

31. ANY ADVICE?
WHAT ADVICE?

1. NO DATA
2. YES DATA

32. WHILE YOU WERE PREGNANT WHO DID YOU SEE ABOUT YOUR HEALTH

1. MD
2. CNM
3. NP
4. RN
5. OTHER

33. WHERE DID YOU SEE THIS PERSON

1. OUTSIDE INN
2. OHSU CLINIC
3. OHSU F.P.
4. OHSU PRIV MD
5. OHSU CNM
6. COMM HEALTH CTR
7. OTHER

34. HOW, WHY DID YOU BEGIN/KNOW WHEN TO START?

1. LOW COST
2. LOCATION
3. CONC ABOUT HEALTH
4. REFFERED BY LAB
5. SUSPECTED PREG
6. OTHER

35. # TIMES_____

36. HOW HELPFUL WAS HCP?

1. NOT HELPFUL
2. SOMEWHAT HELPFUL
3. HELPFUL
4. VERY HELPFUL
5. OTHER

37. SAW NUTR DURING PREG?

1. NO
2. YES

38. WHERE DID YOU SEE THE NUTR?

1. PRENATAL CLINIC
2. HOSPITAL
3. PRIVATE
4. OTHER

39. HOW HELPFUL WAS THE NUTR?

1. NOT HELPFUL
2. SOMEWHAT HELPFUL
3. HELPFUL
4. VERY HELPFUL
5. OTHER

40. SAW A S.W. DURING PREG?

1. NO
2. YES

41. WHERE DID YOU SEE THE SW

1. PRENATAL CLINIC
2. HOSPITAL
3. PRIVATE
4. WELFARE
5. OTHER
6. NA

42. WAS THE SW HELPFUL

1. NOT HELPFUL
2. SOMEWHAT HELPFUL
3. HELPFUL
4. VERY HELPFUL
5. OTHER
6. NA

43. WHAT WAS YOUR USUAL METHOD OF TRANSPORTATION TO PNC

1. WALK
2. DROVE SELF
3. OTHER DROVE
4. BUS
5. TAXI
6. OTHER
7. NA

44. WHAT TYPE OF INSURANCE/MEDICAL COVERAGE DID YOU HAVE?

1. NO INS.
2. MEDICAID OR PLM
3. PR INS.
4. OTHER

45. DID YOU NEED TO FIND A SITTER TO COME TO PNC?

1. NO
2. YES
3. NA

46. DID YOU HAVE ANY PROBLEMS FINDING A SITTER?
1. NO
2. YES
3. NA

47. DID PNC CONFLICT WITH WORK/SCHOOL?
1. NO
2. YES
3. NA

48. WERE THERE ANY OTHER CONFLICTS WITH PNC OR ARRANGING YOU HAD TO DO TO GET TO PNC? WHAT WERE THEY?
1. NO DATA
2. YES DATA

49. HOW LONG DID TOU HAVE TO WAIT TO GET AN APPOINTMENT THE FIRST TIME YOU CALLED?
1. 4 WEEKS AND GREATER
2. 3-4 WEEKS
3. 1-2 WEEKS
4. < 1 WEEK

50.HOW LONG DID YOU USUALLY HAVE TO WAIT TO SEE THE DOCTOR OR NP?
1. 30 MIN AND MORE
2. 15-29 MIN
3. 1-14 MIN
4. NO WAIT
5. NA

51. DID YOU HAVE ANY DIFF. GETTING THROUGH TO THE HCP BY PHONE?
1. NO
2. SOMETIMES
3. YES
4. NA

52. HOW DID YOU FEEL ABOUT WHERE THE CLINIC WAS LOCATED?

WAS IT CONVENIENT?
1. INCONVENIENT
2. CONVENIENT
3. NA

53. HOW DO YOU FEEL ABOUT THE SIZE OF THE CLINIC?
1. TOO BIG
2. TOO SMALL
3. JUST RIGHT
4. NA

54. HOW DO YOU FEEL ABOUT THE ATTITUDES OF THE STAFF AT THE CLINIC?
1. NEGATIVE
2. NEUTRAL
3. POSITIVE
4. OTHER
5. NA

55. DO YOU FEEL LIKE THE STAFF KNEW WHAT THEY WERE DOING?
1. INCOMPETENT
2. COMPETENT
3. OTHER
4. NA

56. HOW MUCH DID IT COST YOU FOR A SITTER TO GET TO PNC?
1. >50
2. 25-49
3. 10-24
4. 5-9
5. 1-4
6. 0
7. OTHER
8. NA

57. HOW MUCH DID IT COST YOU TO BE SEEN AT PNC AND FOR DELIVERY?
1. >500
2. 250-499
3. 100-249
4. 50-99
5. 25-49
6. 1-25
7. 0
8. NA

58. WHAT WAS THE COST OF TRANSPORTATION?
1. 50 -100
2. 25-49
3 10-24
4. 1-9
5 0
6. NA

59. WHAT WAS THE COST OF ANY MEDICINES?
1. 50 -100 6. NA
2. 25-49
3 10-24
4. 1-9
5 0

60. WAS THERE ANY OTHER EXPENSES? WHAT WERE THEY?
1. NO DATA
2. YES DATA

Appendix C

Oregon Health Sciences University

CONSENT FORM

You are invited to join a study about prenatal Care called "Attendance at Prenatal Care". This study will help health care providers understand the problems women face when they try to get prenatal care. Sheila Mahoney, a graduate nursing student at the Oregon Health Sciences University (OHSU) is conducting the study under the supervision of Dr. Mary Ann Curry, Professor, School of Nursing.

Should you agree to participate, Sheila Mahoney will ask you some questions about your experiences attending prenatal care and will write down your answers. This should take about 15 minutes and you will be visited only once. Some of the questions are personal and may cause some discomfort. You do not need to answer any questions that cause discomfort. If you become uncomfortable with the questions, Sheila is willing to talk to you, get your nurse or refer you to social service personnel.

Some information will be taken from your medical records. All information will be confidential and your name will not appear on any form as code numbers will be used. You do not have to participate in this study and may stop at any time. Not participating or continuing with the study will in no way affect the care you receive as a patient at OHSU. Sheila will answer any questions you may have about the study and can be reached at 503-282-6286.

The Oregon Health Sciences University as an agency of the State is covered by the State Liability Fund. If you suffer any injury from the research project, compensation would be available to you only if you establish that the injury occurred through the fault of the University, its officers or employees. If you have further questions, please call Dr. Michael Baird at (503) 279-8014.

I have read the above and agree to participate in the study.

_____ _____

subject date

_____ _____

witness date

AN ABSTRACT OF THE THESIS OF

SHEILA F. MAHONEY

For the Master of Science

Date Receiving Degree: August 9, 1989

Title: ATTENDANCE AT PRENATAL CARE

APPROVED: _____

Mary Ann Curry, R.N., D.N.Sc., Thesis Advisor

Early and regular attendance at prenatal care has been associated with improved pregnancy outcomes, particularly with a lower incidence of prematurity and low birthweight. The purpose of this study was to determine what barriers were identified by a recently delivered sample of women in Portland, Oregon that prevented them from receiving an adequate amount of prenatal care. In addition, this study sought to determine how women who experienced barriers, yet had adequate prenatal attendance, overcame these barriers.

Four research questions were formulated:

1. Are there demographic differences between women with adequate attendance at prenatal care, intermediate attendance and inadequate attendance?

2. What are the reasons for the different attendance rates between the three groups of women in this study?

3. Do women with an adequate number of visits ever encounter these or other barriers?

4. If barriers were encountered by the adequate attendance group, how were they overcome?

The sample consisted of 50 women who were divided into three attendance groups: adequate, intermediate and inadequate based on a combination of both number of visits and gestation in which prenatal care began. Women were interviewed in the hospital during their immediate postpartum course.

The sample was primarily white, lived with someone else, had a mean monthly income below the cutoff for eligibility for Welfare benefits from the State of Oregon ($740.00 for a family of three), had less than a high school education, were employed largely in manual/service jobs, and did not use illegal drugs. Data were collected by means of a personal interview.

In general the findings supported the existing data on barriers to prenatal care attendance with some exceptions. Statistically significant findings included the following; (a) those with adequate attendance were more likely to tell a second person about the pregnancy sooner than women in the other 2 groups, (b) women who saw a nutritionist had better attendance than those who didn't, (c) more expensive means of transportation to care were used by those with adequate attendance, (d) those with adequate attendance spent more on transportation than those with inadequate or intermediate attendance, (e) women who felt prenatal care to be important were more likely to have adequate attendance and (f) multiparous women who saw a health care provider with their first pregnancy were more likely to have adequate attendance in this pregnancy than multiparous women who

did not see a health care provider in their first pregnancy.

Study trends found white women, those with more years of education, those with professional jobs, those whose income fell above the eligibility level for Welfare from the State of Oregon, and those with a better social support network had better attendance at prenatal care. Women with better attendance were also more pleased about the pregnancy and more satisfied with the care they received than others. These trends are supported in the literature.

There were 4 findings from this study which contradicted the literature, although they did not reach statistical significance. First, most women in this sample did not need childcare while they attended prenatal care and those who did need childcare, did not have a problem finding it. Second, there were fairly equal numbers of those admitting to illegal drug use in all three attendance groups, although type of use differed. Third, household size was fairly consistent among the different attendance groups, although the literature has shown that those with a larger family size attend less. Finally, the mean age of the women in all three attendance groups was the same, while other studies have found that those on either end of the age continuum attend less.

Thirty percent of the women with adequate attendance admitted to experiencing barriers to care. The most frequent barrier was transportation, followed by low finances and the frequency of visits. Most women overcame these barriers because of a personal belief that prenatal care was important for the

health of the baby. In addition, they had family or friends on whom they could rely for transportation.

Limitations to this study include sampling and measurement methodology. A larger sample size would possibly have resulted in greater statistical significance on certain items which at present only approached significance. The homogeneity of the sample (all women who delivered at the same hospital) limits generalizability to diverse childbearing populations and to other regions. In addition, there was only one woman who had no prenatal care visits. This limits the information obtained from this particular group.

Methodological considerations include the ex post facto design. In addition there is no reported reliability or validity for the questionnaire used.