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**PREGNANCY INTENDEDNESS
AMONG A LOW INCOME POPULATION**

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**Thesis submitted to the School of Medicine
at West Virginia University
in partial fulfillment of the requirements for the degree of**

**Master of Science
In
Community Health Promotion**

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**Keywords: Pregnancy, Intendedness, Social Support, Low Income, Psychosocial
Factors**

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ABSTRACT

Pregnancy Intendedness Among a Low Income Population

Amy N. Thomas

Introduction: In the United States, approximately 3.1 million births per year are classified as unintended. **Specific Aims:** This study will examine the association between pregnancy intendedness and support characteristics, key demographic factors and psychological factors in a low income population. **Methods:** Three interviews were conducted as part of the intensive evaluation. Questions focused on demographics, prenatal health behaviors and psychosocial factors. **Results:** Unintended pregnancy resulting in birth was most commonly found among non-White, poorly educated and those living in poverty. The support of the family or friends was not found to be significant when comparing it to the intendedness of the pregnancy – but the support received from the partner was found to be significant. The only psychosocial factor found significantly related to pregnancy intendedness was the mother's feelings about this pregnancy.

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CHAPTER 1: INTRODUCTION

Statement of Research Problem

In the United States, approximately 3.1 million births per year are classified as unintended, and 1.6 million of these result in abortion (Fischer et al, 1988). Many of the unintended pregnancies that result in live births have been associated with poor pregnancy outcomes. Data from the National Survey of Family Growth showed a significant association between unintended pregnancies and low birthweight (Bitto, 1997). In the past decade, studies have examined women's behaviors during pregnancy and the results on the health of the baby (Kost, 1998).

A pregnancy, intended or unintended, can cause changes in a woman's life. Her work, family and social relationships, education, and finances are among areas in the woman's life that can be adversely affected (Orr, 1997). Psychosocial well-being can also be affected (Zachariah, 1996). The burdens of an unintended pregnancy are common and inevitable. The attitude in cultures that have a much lower rate of unintended pregnancies is that these are unfortunate and rare events that occur despite our best intentions (Hogue, 1997). Women and her partner or family can be subjected to increased stress and an increase in depression, which in turn can lead to adverse health outcomes.

Significance

In the past, several studies have focused on past reports or hypothetical (Connelly, 1998) pregnancies when looking at the concept of pregnancy intendedness. This research study concentrates on the intendedness during the present pregnancy. This study will also combine factors – psychosocial, support, and demographics – which has not been investigated, to relate these to pregnancy intendedness.

Because many births in the United States are unintended, and because it is the goal of clinicians and health educators to optimize fetal growth and reduce pregnancy complications, it is important to understand whether pregnancy intendedness is associated with health outcomes of the mother and child.

The epidemic of unintended pregnancies has not gone unnoticed by researchers. Studies have shown that pregnancy intendedness is related to psychosocial factors (Orr, 1997) and (Barnet, 1996); healthy outcomes of the baby (Kost, 1995 and 1998) and (Hollander, 1995); and social support (Aaronson, 1989) and (Fischer, 1999). The extent to which these factors are influenced due to pregnancy intendedness is extremely important when related to the health of the baby and the mother.

For those women who have an unintended pregnancy, the influence of social networks is a concern. It has been suggested that greater connection to a social support system leads to positive health outcomes for mother and baby (Aaronson, 1989).

Study Objectives

This study will examine the association between pregnancy intendedness and support

characteristics, key demographic factors and psychosocial factors in a low-income population. Several studies have been conducted comparing pregnancy intention relating to support or demographics or psychological indicators, but none have combined these issues in a research study. Looking at these issues will influence the composition of prenatal care programs.

Research Questions & Hypotheses

This study will focus on the following research questions and hypotheses:

Research Question I: What demographic factors are related to pregnancy intendedness?

Research Question II: What is the relationship between pregnancy intendedness and social support?

Hypothesis I: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unintended), pregnant women who wanted this pregnancy perceive more support for the pregnancy from significant others (baby's father, family, friends).

Hypothesis II: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unintended), pregnant women who wanted this pregnancy are more likely to have supportive relationships

Research Question III: What is the relationship between psychological indicators and pregnancy intendedness?

Hypothesis III: Compared to those pregnant women who do not want a pregnancy

at the present time or in the future (unintended), pregnant women who wanted this pregnancy are more positive about the pregnancy.

Hypothesis IV: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unintended), pregnant women who wanted this pregnancy have more favorable psychological indicators (less depression, less stress, better self-esteem).

CHAPTER 2: BACKGROUND

Several studies have been conducted on the issue of pregnancy intendedness. The following studies point to several factors important to consider in looking at the issue of pregnancy intendedness.

A qualitative study using in-depth semi-structured interviews with 18 women explored how women define the intention status of current, past, and hypothetical pregnancies (Fischer et al, 1999). Findings showed that most women clearly defined a difference in the terms planned and wanted, but not planned and intended. A planned and intended pregnancy carried action-oriented distinction whereas wanting was emotional. Support from family and friends toward a pregnancy may be more associated with wantedness than to intending or planning to become pregnant. Women who defined their pregnancy as wanted, even if unplanned, indicated they had support from their partners or family and security in their life circumstances such that they were pleased with this pregnancy even though it was not planned. Poor timing was not so much a factor in determining the woman's definition of unwantedness as was the adversity of her situation, which included an ambivalent partner, an unsupportive family, and inadequate financial resources. Two women had family support that they felt they could draw on in their decision to continue their pregnancy and felt that although the pregnancy was unwanted initially, it had become wanted over time. The partner's attitude toward the pregnancy was prominent in all but one case, including instances where the study participants had other means of support, such as adequate financial resources, family

members who approved of the pregnancy, or government assistance. Classifying pregnancies as intended, or mistimed, or unwanted may be a problem for women who have not decided on a lifetime reproductive choices (Kaufmann et al, 1997).

A relationship between intendedness and wantedness was found among a sample of predominantly white, middle-class residents of the San Francisco area (Miller, 1974). The data from this study suggested that a relationship was found between the concepts of wantedness and intendedness. High intendedness was found associated with high wantedness; but medium and low intendedness are associated with a wide range of wantedness.

Some studies, such as Sable (1999), suggest that pregnancy intentions may not be a useful variable to examine for research on maternal and child health outcomes. Sable, who served as a counselor at an abortion clinic in the 1970's, states that a "woman's ambivalence about pregnancy and the unconscious wish to become pregnant even if one doesn't really want a baby – are powerful forces that complicate the whole issue of intendedness".

Unfortunately, there is not a uniform questionnaire used to survey pregnant women regarding the intendedness of their pregnancy. The PRAMS (Pregnancy Risk Assessment Survey), NMHIS (National Maternal and Infant Health Survey), and the NNS (National Natality Survey) were among those surveys examined. All of the surveys classify pregnancies into categories of intendedness after only a few questions are asked (Peterson, 1997). The issue of intendedness is a very complex one. Such limited information can not clearly classify a pregnancy as wanted, unwanted, intended or

unintended. The researchers concluded that current information available from national surveys is not comparable due to different survey questions, inclusion criteria, and timing of interviews. What are often categorized as unintended, may actually be unwanted – two different concepts.

Depressive symptoms were found to be substantially higher for women with unintended pregnancies. Women in this study with an unintended pregnancy were found to demonstrate decreased overall satisfaction of life, elevated depressive symptoms and diminished support from the father (Orr, 1997). Along with depressive symptoms, this study examined social support from the baby's father and exposure to stressors. A large percentage of women who reported their pregnancy as unintended also reported receiving low support from the father of the baby and decreased overall life satisfaction. The sample in this study consisted of socioeconomically disadvantaged, African-American women, a majority had a high-school education, one-third were employed and approximately 73% were single. Those women with unwanted pregnancies were more likely than those with intended pregnancies to report higher levels of exposure to stressors ($p=.01$). Higher levels of depressive symptoms were also reported by 10.2% of those with mistimed pregnancies and by 14.7% of those who were unsure of the intendedness of the pregnancy.

Depressive factors were found common among teenage girls who are pregnant or have recently given birth (Barnet, 1996). A group of teens attending an adolescent pregnancy and parenting program reported their depressive symptoms and social support during the third trimester of pregnancy and at four-months postpartum. Forty-two

percent had significant depressive symptoms during the third trimester. Stress levels increased significantly from the third trimester to the postpartum period and were positively associated with depressive symptoms. Increased rates of depressive symptoms were found when conflict with the baby's father had occurred. Receiving social support from the adolescent's mother or the baby's father was associated with lower rates of depression.

The relationship with partner was found to be significant predictors of psychological well-being during pregnancy (Zachariah, 1996). For the women in the study, social support demonstrated direct positive effects on psychological well-being. Women taking part in this study were 18 or older, married, medically healthy and experiencing the first live-born infant.

Adolescent girls who reported they "wanted a baby" as a reason for pregnancy were compared to those who reported that the pregnancy "just happened" (Rubin, 1999). When examined at 24 months postpartum, those who wanted a baby were more likely to be married to the father of the baby, be financially supported by him, and received child care assistance from him. It was concluded that intentional pregnancy teens had better financial status and their relationship with the father of the baby was better than those with an unintended pregnancy.

Among women who have ever been married, the prevalence of wanted births typically increases with age (Kaufmann et al, 1997). A previous study (Kost, 1995) compared pregnancy intendedness and differences by mothers' sociodemographic factors. In this study, 57% of the births were categorized as intended. The level of

unintended pregnancies was high among the following sociodemographic categories – age 15-17, women living below the poverty level, single, Black and less than 12 years of education. Black women, in this study, were more likely to categorize their pregnancy as unwanted or mistimed. Black women were also more likely to mistime a wanted birth. Analysis indicated that births to unmarried women – whether formerly married or never married – are less likely than those pregnancies to married women to be wanted and more likely to be unintended.

Five socioeconomic measures were evaluated from data collected from PRAMS. Education and poverty status are common socioeconomic indicators, but also included in the study was participation in a special supplemental food program, such as WIC, residential crowding and Medicaid payment for delivery (Gazmararian, 1996). Findings suggested that the likelihood that the pregnancy was unintended was significantly related to each socioeconomic measure. Among women younger than 20 and unmarried, the association strength was greatly reduced and not significant. It was found that among women younger than 20, the likelihood that the pregnancy was unintended was significantly less for those with less than 12 years of education than for those with more than 12 years of education. The strongest association between socioeconomic factors examined showed that poor/non-poor status had the strongest relationship with unintended pregnancy. The distribution of maternal behaviors indicated that 34.9% of respondents smoked during the three months prior to pregnancy, 31.7% had delayed or no prenatal care and 40.2% had an unintended pregnancy (Gazmararian 1996).

Women who have planned or intended pregnancies were found to have better

health outcomes of their infant (Kost, 1998). Women with intended pregnancies were found to recognize the early signs of pregnancy (within the first six weeks), thus receiving prenatal care earlier and presenting to at least 90% of the recommended visits. These women were also more likely than women with unintended pregnancies to quit smoking, gain the recommended amount of weight, take vitamins, and quit or reduce alcohol consumption. Another study found a decrease of caffeinated beverage consumption was seen in women with an intended pregnancy (Hellerstedt, 1998). Social and demographic characteristics, Kost concluded, are important predictors of pregnancy-related behavior. In this study, demographics were very different than the studies discussed previously. The majority of women were 29 or older, 37% had a college education, and 56% reported annual income above \$45,000. Both the intendedness of a pregnancy and the mother's social and demographic characteristics are important indicators of pregnancy-related behavior (Kost, 1998). Most of all women who had a live birth received prenatal care, but only about two-thirds began prenatal care during the first trimester. Hollander (1995) concluded that teens were far less likely to receive early prenatal care, have a mistimed pregnancy and to see a private physician for prenatal care.

The influence of social support on receiving prenatal care, positive health behaviors and attitudes was examined among a sample of 300 women who were primarily poor and Black (Giblin et al, 1990). The presence of social support was correlated with positive health behaviors, not using drugs and adequate health resources. Norbeck and Anderson examined the stability and effects of life stress, social support, and anxiety among low-income women. The researchers hypothesized that social support

will buffer effects of life stress on anxiety at Time 1 (mid-pregnancy), Time 2 (late-pregnancy), and in the prospective test of these relationships. Significant social support from the pregnant woman's partner was found significant – accounting for 3% of the variance in anxiety. As predicted by the hypothesis, the group with the lowest anxiety level was the high-support/low-stress group. The advocacy role for nurses on behalf of low-income women was a suggested priority for medical providers working with this population (Norbeck, 1989). In the United States, unintended pregnancy resulting in birth is most common among non-white, poorly educated, adolescent and those living in poverty (Hellerdest, 1998).

The partner's attitude toward the pregnancy was prominent when the woman was defining the status of her pregnancy in a 1999 study. This support was a factor even if the woman had other means of support, such as adequate financial resources, family members' support of the pregnancy, family members who could provide support after the birth of the child or government assistance (Fischer et al, 1999). Married women in this study were more likely to have a planned and wanted pregnancy. However, women who became pregnant without making the decision to do so with their spouse reported that their husband's support influenced the pregnancy becoming wanted.

A unique study examined the father's needs during the pregnancy (Kleiner, 1992). The male experience during the pregnancy depends on two primary issues: the way the expectant father deals with emotions, and the quality of communication between the couple. The father-to-be needs just as much support as the mother-to-be and he rarely asks for or receives it.

Connelly (1998) found in a study that included pregnant and non-pregnant adolescents that the common view that adolescent pregnancy is related to a lack of hopefulness was not supported. Adolescents in this study were affiliated with support strong networks. The support perceived may have resulted from attention to ensure adequate prenatal care, the need to complete education and the symbolic significance of motherhood.

In summary, studies point to several factors with pregnancy intendedness: support from partners and family; sociodemographic characteristics, such as age, race, education, and marital status; and psychological measure, especially depression. Few of these studies have looked at support from significant others or characteristics of women's social networks, including support available from these networks.

Theoretical framework

Individuals learn behaviors mainly through primary group associations within their own social networks (friends, family, etc.). The term social network refers to a person-centered web of social relationships (Glanz et al, 1997). Informal social networks (friends and family) have been shown to be important in influencing positive health behaviors among women and minorities.

The provision of social support is one of the important functions of social relationships. Thus, social networks are linkages between people that may or may not provide social support and that may serve other functions in addition to that support. Social support is the functional content of relationships, which can be categorized along four broad types of supportive behavior. The first is emotional support. This type involves the components of empathy, love, trust and caring. Another category is instrumental support, which involves tangible aid and services that directly assist a person in need. Informational support is the provision of advice, suggestions, and information that a person can use in addressing problems. The fourth type is appraisal support, which includes giving information and advice which is useful in self-evaluation, or it can be termed “constructive criticism”.

The study of social support was a major concept in the research of John Cassel (1976). Cassel suggested that social support serves as a key psychosocial protective factor that reduces individuals’ vulnerability to the negative effects of stress on life. He concluded that social support might influence the incidence and prevalence of a wide

array of health outcomes.

Social networks and social support can enhance an individual's ability to access new contacts and information and to identify and solve problems. If the support provided helps to reduce uncertainty and unpredictability or helps to produce desired outcomes, then a sense of personal control over specific situations and life domains will be enhanced (Glanz et al, 1997).

Social support has been shown to have a significant affect as a “stress-buffer”. A variety of techniques to manage stress and to reduce the ill effects of the stressors have been developed and tested in recent years. Social support can influence how a person adapts psychologically to a stressful event – such as an unintended pregnancy. A supportive environment can also protect against stress by providing opportunities for individuals to explore different coping options.

CHAPTER 3: METHODS

Study Population & Program

The Maternal Outreach Worker (MOW) Baby Love program was funded in 1992, by the Kate B. Reynolds Health Care Trust Fund to decrease poor pregnancy outcomes among at-risk women in North Carolina. This social support program was designed to take place in 24 counties in North Carolina. The program was designed to combat North Carolina's high infant mortality rate – one of the highest in the country.

One of the main objectives of the MOW program was to enhance Medicaid's Maternity Care Coordination Program through home visits and other outreach services. Non-professional, paid health-care workers from the respective program communities provided the outreach services. The MOW Program had five strategies to meet the goal of reducing infant mortality in the state. These five strategies are: (1) encourage women to enter earlier into prenatal programs such as the WIC nutrition program; (2) encourage the regularity of prenatal visits and consistency of prenatal care; (3) educate new mothers on healthful behaviors and effective parenting skills; (4) increasing the time between pregnancies; and finally, (5) to reduce the incidence rate of unplanned pregnancies.

The MOW program provided services to eligible infants up to one year of age. The program objectives for these infants are: (1) to encourage earlier and continuous participation in well-baby programs; (2) improved birthweight; and (3) increased utilization of support services such as WIC and other Medicaid services.

To meet program objectives, Maternal Outreach Workers (MOW) were hired and trained. This three-month training included 60 hours of basic training for assessing client

living situations and access to appropriate resources. The MOW practitioner training also involved skill development in the areas of problem solving, effective communication, emotional support and client advocacy.

Each MOW had 25-30 clients in need of intensive one-on-one support services. These were Medicaid eligible women, who were 28 or fewer weeks pregnant. MOW's were to follow these women until their baby was one year old. The clients were identified by a Maternity Care Coordinator and then referred to an MOW case worker. Some criteria used in the client referral included substance use, young age, history of family violence, social or geographic isolation and a history of noncompliance to health care or social services.

Program Evaluation

A two-pronged evaluation was designed to determine the effectiveness of the North Carolina Baby Love Maternal Outreach Worker (Tessaro et al, 1997) Program. An intensive interview was conducted with participants and non-participants to determine impact of the program and a program-wide evaluation was conducted to determine birth outcomes among those who did not participate in the program. Major components of the program's effectiveness were based on pregnancy outcomes, health behaviors of the participants, and the health status of their infants.

Data Collection

Three interviews (during pregnancy, one month postpartum and one year after the

birth of the baby) were conducted as part of the intensive evaluation. The present study uses interview data with those women who completed the first interview during pregnancy.

Interview subjects were selected from counties participating and those not participating in the MOW program. The interview participants were selected and recruited by a Maternal Care Coordinator according to pre-existing criteria. Participants for the intensive interview evaluation were recruited based on whether they were at less than 28 weeks gestation, were receiving Maternal Coordination Care from a County Health Department and they met the qualifications for the MOW Baby Love Program. The women also possessed one or more of the following high-risk characteristics: young teen, substance abuse, lacking social support, non-compliance of care or mental illness and depression. Referrals to the program were most often based on a lack of social support. Through this selection process, 705 women agreed to participate in this component of the evaluation: 332 were from comparison counties and 373 were from MOW program counties.

Data were collected in this study using structured, face-to-face interviews. Each interviewer was trained and each interview took between 45 and 90 minutes. A day-long training session on interviewing techniques and the use of the questionnaires. Over the three years of data collection, 28 interviewers were used in the study. The interview questions focused on demographics (income, race, amount of schooling completed, etc.), perceived needs, psychological function, informal social support networks such as support from friends and family, and substance abuse during pregnancy.

Study Variables

Pregnancy intendedness was assessed by the following question:

Thinking back, just before you got pregnant, would you say you:

- a) wanted to become pregnant at this time,*
- b) did not want to become pregnant at that time, but wanted a child sometime in the future, or*
- c) did not want to become pregnant at that time or any time in the future.*

The pregnancy was categorized as “wanted” if the respondent stated that the pregnancy was wanted at this time. Likewise, a pregnancy was unwanted if the responded stated either choice b or c.

Demographic Characteristics

Demographic factors were divided into several categories. For purposes of this study, race was classified as “white” or “non-white”. The age of mothers participating in the study was classified as less than 17, 18-19, or over 20. Education level was determined by either did or did not graduate from high school. Marital status was divided into the categories: single, married, separated, widowed, divorced, or never married. Weeks gestation when first presented to prenatal care was categorized as first trimester, within the first 13 weeks; second trimester, 14-26 weeks; and the third trimester, 26 weeks or more determined this classification. Number of pregnancies were classified as (1) first or (2) second or more pregnancies. Whether the women had used birth control in the year before pregnancy was classified as yes or no.

Social Support

Informal social networks were subdivided into structural and functional components. Structural support was further divided into sources of and frequency of support. The source of the support was further subdivided into two categories – support from a male or female. The frequency of support was measured on a scale ranging from “never received” to “often received”. Social support variables included support from the father of the baby, interaction with friends and relatives, people they feel “close to”, among others.

Psychological Measures

Depressive symptoms were assessed with the 20-item self-report Centers for Epidemiologic Studies Depression Scale (CES-D), see Appendix A for a complete list (Radloff, 1997). Respondents were asked to say how many days in the last week they experienced a range of behaviors (loss of appetite, sleep disturbance, emotional and social patterns) or feelings (elated, hopeful, sad, fearful). High internal consistency reliability levels have been reported for the scale (coefficient alpha .90 or above). The total score of 60 or more defined the category of “high depression”.

Perceived stress was assessed using the Perceived Stress Scale (PSS) (Cohen, 1983), a 14-item self-report measure (Appendix B) which assesses the degree to which situations during the last month are appraised as stressful. Items were rated on a five point Likert scale from never to very often. High internal consistency has been reported for this scale (coefficient alpha .85 and test-retest reliability .85). A total score of 36 or more was defined as “high stress”.

Self-esteem was assessed using Rosenberg's Self-Esteem scale (Rosenberg), a 10-item self-report measure dealing with issues of self-worth and respect (Appendix C). Items were measured on a four point Likert scale from strongly agrees to strongly disagree. Test-retest reliability for this scale ranges from .85 to .88. The total score of 25 or less was defined as "low self-esteem".

Feelings about pregnancy were assessed with an open-ended question and were content coded as positive, negative at first then positive, ambivalent and negative about pregnancy.

Data Analysis

Frequency distributions were calculated for all study variables. Hypotheses were tested using chi square analysis since all variables were measured at nominal and ordinal levels. Associations between pregnancy intendedness and sociodemographic, social support, and psychological variables were considered significant at the .05 level.

CHAPTER 4: RESULTS

Table 1 shows the characteristics of the sample. Program participants who were 20 or older, made up the largest portion (45.8%) of the study population followed by those 17 or younger (34.6%), and ages 18-19 (19.6%). White participants made up 36.5% of the sample and non-Whites, 63.6%. The “non-White” category was made up of those who were Black, Native American, Hispanic, Asian or “other”. Race was recorded by observation. Of all participants, 13.9% were married, 4.3% were divorced, 7.7% were separated, 0.4% were widowed, and 73.8% were never married. Those who graduated high school made up 37.3% of the study group – 62.7% did not complete high school. The trimester in which the study participant entered the study was: 17.6% in the first trimester (<13 weeks gestation), 55.8% in the second trimester (14-26 weeks gestation), 25.9% in the third trimester (>26 weeks). Those women that were uncertain of the gestation period made up 0.7% of the study group. The women who used birth control in the year preceding their pregnancy made up 70.9% of the study population – 29.1% did not use birth control. Study participants who were pregnant for the first time made up 47.1% of the study population. Those having their second or other baby made up 52.9% of the group. Of the 705 women, 19.4% (N=137) intended to become pregnant, while 80.6% did not want to become pregnant at this time.

Table 1: Characteristics of the sample.

	N	%
Age		
<17	244	34.6
18-19	138	19.6
20+	323	45.8
Race		
White	257	36.5
Non- White	448	63.5
Marital Status		
Married	98	13.9
Divorced	30	4.3
Separated	54	7.7
Widowed	3	0.4
Never Married	520	73.8
Intendedness		
Want Now	137	19.4
Did Not Want Now	568	80.6
Education		
< High School	441	62.7
HS Graduate	262	37.3

Main Findings

Research question 1: What demographic factors are related to pregnancy intendedness?

Table 2 compares selected demographic factors and the relationship to pregnancy intendedness. Women who reported they wanted this pregnancy at this time were older than those who reported they did not want to become pregnant either at this time or in the future ($p=.001$). For those women under age 17, 20.4% wanted the pregnancy compared to 38.0% who did not.

This table also shows the relationship of ethnicity to pregnancy intendedness. Compared to non-Whites, Whites were more likely to have a wanted pregnancy, $p=.001$. A higher percentage, 68.1%, of non-White women reported they did not want this pregnancy at this time.

Those who were never married were more likely (79.4%) to have an unwanted pregnancy than those who were married ($p=.001$). Only 9.7%, who were married had an unwanted pregnancy.

Also found significant, $p=.005$, was the relationship between currently having a boyfriend and having a wanted or unwanted pregnancy. Those women who did not have a boyfriend were more likely to have an unwanted pregnancy. Those women who wanted the pregnancy at this time were significantly more likely to be a high school graduate compared to those who did not complete high school ($p=.009$).

Women who presented for prenatal care in their first trimester of pregnancy were more likely to report they wanted this pregnancy at this time ($p=.011$). Those women

who reported they were not using birth control were more likely to have an unwanted pregnancy at this time. Those women who reported they did use birth control in the year before pregnancy were more likely to say this pregnancy was unintended ($p=.007$).

Table 2: Associations between sociodemographic variables and pregnancy intendedness

	Wanted	Unwanted		
	N (%)	N (%)	Chi-square	p-value
Age				
<17	28 (20.4)	216 (38.0)	15.55	.001
18-19	30 (21.9)	108 (19.0)		
20+	79 (57.7)	244 (43.0)		
Ethnicity				
White	76 (55.5)	181 (31.9)	26.56	.001
Non-White	61 (44.5)	387 (68.1)		
Marital Status				
Married	43 (31.4)	55 (9.7)	59.59	.001
Divorced	12 (8.7)	18 (3.2)		
Separated	13 (9.5)	41 (7.2)		
Widowed	0 (0)	3 (0.1)		
Never Married	69 (50.4)	451 (79.4)		
Currently have boyfriend?				
Yes	64 (80)	300 (64.6)	7.26	.005
No	16 (20)	164 (35.3)		
High School Graduate				
Yes	64 (47.1)	198 (34.9)	6.91	.009
No	72 (53)	369 (65.1)		
Trimester of pregnancy				
<13 weeks	35 (25.7)	89 (15.7)	10.48	.011
14-26 weeks	75 (55.1)	318 (56)		
>26 weeks	26 (19.1)	156 (27.5)		
Birth control used?				
Yes	84 (61.3)	415 (73.2)	7.54	.007
No	53 (38.7)	152 (26.8)		
First pregnancy				
Yes	55 (40.2)	277 (48.8)	3.29	.070
No	82 (59.9)	291 (51.2)		

Research question II: What is the relationship between pregnancy intendedness and social support?

Table 3 shows the relationship between pregnancy social support, living with a significant other, and pregnancy intendedness. Women who received strong support from the father of the baby ($p=.001$), family ($p=.013$), and friends ($p=.008$) were more likely to report they wanted their pregnancy at this time.

If the woman lived with the father of the baby she was significantly more likely to want this pregnancy ($p=.001$). This was the opposite if the woman lived with her mother. If the mother of the study participant lived with her pregnant daughter, the pregnancy was more likely to be unwanted ($p=.001$).

Table 3: Association of social support and pregnancy intendedness

	Wanted	Unwanted		
	N(%)	N (%)	Chi-square	p-value
Father of Baby				
How the father of baby feels			38.8	.001
Very supp.	95 (69.3)	225 (40.3)		
Supportive	30 (21.9)	198 (35.5)		
Unsupportive	4 (2.9)	56 (10.0)		
Very un supp.	8 (5.8)	79 (14.2)		
Lives with			63.82	.001
Yes	73 (53.3)	112 (19.8)		
No	64 (46.7)	454 (80.2)		
Family				
How family feels			10.34	.013
Very supp.	80 (59.7)	266 (47.4)		
Supportive	37 (27.6)	239 (42.6)		
Unsupportive	10 (7.5)	36 (5.1)		
Very un supp.	7 (5.2)	20 (3.6)		
Lives with mom			15.57	.001
Yes	39 (28.5)	267 (49.1)		
No	98 (71.5)	300 (52.9)		
Friends				
How friends feel			11.78	.008
Supportive	69 (52.3)	206 (37.2)		
Very supp.	50 (37.9)	296 (53.4)		
Unsupportive	4 (3.0)	22 (4.0)		
Very un supp	9 (6.8)	30 (5.4)		
Lives			0.031	0.862
Alone	6 (4.4)	23 (4.1)		
Not alone	131 (95.6)	545 (96.0)		

Table 4 shows the relationship between types of general social support and pregnancy intendedness. In terms of instrumental support, if a woman reports that the father of the baby can help with the pregnancy, she is more likely to also report the pregnancy was wanted ($p=.001$). No association was found for help from family or friends.

There was no significant association found between pregnancy intendedness and emotional support, in the sense of “feeling close” with a friend ($p=.077$) or the family ($p=.204$). Frequency of correspondence between the woman and her friends showed a significant ($p=.015$) relationship. Those women who interacted more with friends were more likely to have an unwanted pregnancy, possibly indicating less contact with family or the father of the baby.

Table 4: Association of types of social support and pregnancy intendedness

	Wanted	Unwanted		
	N (%)	N (%)	Chi square	p-value
Instrumental Support				
Father can help			14.68	.001
Yes	59 (43.1)	150 (26.4)		
No	78 (57)	418 (73.6)		
Family can help			0.279	.597
Yes	60 (43.8)	263 (46.3)		
No	77 (56.2)	305 (53.7)		
Friend can help			0.040	.842
Yes	41 (30.2)	166 (29.3)		
No	95 (69.9)	401 (70.7)		
Emotional Support				
	Feel Close			
Friend			3.29	.077
None	32 (23.4)	95 (16.7)		
1 +	105 (76.6)	473 (83.3)		
Family			1.70	.204
None	21 (15.3)	64 (11.3)		
1 +	116 (84.7)	503 (88.7)		
	Amount of correspondence			
Friend			6.03	.015
Rarely	57 (41.6)	80 (30.6)		
1 + per week	80 (58.4)	394 (69.4)		
Family			.067	.796
Rarely	30 (21.9)	130 (22.9)		
1 + per week	107 (78.1)	437 (77.1)		

Research question III: What is the relationship between psychological indicators and pregnancy intendedness?

There is a high significance ($p=.001$) associated between pregnancy intendedness and only one of the four psychosocial factors examined. Women who wanted the pregnancy at this time were more likely to feel positive about the pregnancy ($p=.001$)

There was no relationship found between pregnancy intendedness and self-esteem ($p=.46$), perceived stress ($p=.95$), or depression ($p=.19$). Overall, few women in this population reported high stress (10%) or depression (<15%) (Table 5).

Table 5: Relationship between pregnancy intendedness and psychosocial factors

	Wanted	Unwanted		
	N (%)	N(%)	Chi-square	p-value
Feelings about this pregnancy				
Positive	110 (80.3)	345 (61.0)		
Negative then positive	2 (1.5)	80 (14.1)	23.85	.001
Ambivalent	13 (9.5)	81 (14.3)		
Negative	12 (8.8)	60 (10.6)		
Self-esteem				
Positive	17 (12.4)	58 (10.2)	0.561	.462
Negative	120 (87.6)	510 (89.8)		
Perceived stress				
High	14 (10.2)	57 (10.1)	0.003	.954
Low	123 (89.8)	510 (89.1)		
Depression				
High CES-D	20 (14.6)	60 (10.6)	1.787	.194
Low CES-C	117 (85.4)	508 (89.4)		

Discussion

Sample

The distribution and similarities among various sociodemographic factors were found among the MOW program participants. Participants in the MOW program that were recruited for interviewing were selected based on whether they were at less than 28 weeks gestation, receiving Maternal Coordination Care from a County Health Department and they met the qualifications for the Baby Love Program. The women also possessed one or more of the following high-risk characteristics: young teen, substance abuse, lacking social support, non-compliance of care or mental illness and depression. Referrals to the program were most often based on a lack of social support. Through this selection process, 705 women agreed to participate in this component of the evaluation: 332 were from comparison counties and 373 were from MOW program counties.

Program participants who were 20 or older, made up the largest portion of the study population followed by those 17 or younger, and finally, 18-19. Many of the study participants did not complete high school. If a woman used birth control and became pregnant, the pregnancy was most likely an unwanted one.

*Research question I: What demographic factors are related to pregnancy intendedness?

Of the sociodemographic factors compared with intendedness, all were found significant – except for one, first pregnancy. As reported by Hellerdest (1998) unintended pregnancy resulting in birth is most commonly found among non-White, poorly educated and those living in poverty – results of this study are similar. The

women who were older, 20 and over, were found to be more likely to want their pregnancy at this time. Findings in this study were similar to Kost's (1995). Both studies found the level of unintended pregnancies were higher among those women age 15-17, single, non-White and did not graduate high school. As suggested by Kaufman et al (1997), this study also showed that women who have ever been married, the prevalence of pregnancy intendedness increased with age.

Women in the second trimester of pregnancy made up the majority of study participants. As suggested by Kost (1998), Gazmararain (1996), Orr (1997) and Hollander (1995), this study coincides with their findings that women with an unintended pregnancy are more likely to enroll in prenatal care later than those with an intended pregnancy. This study also found that among women with less than a high school education, the likelihood was greater that the pregnancy was unwanted. High school incompleteness possibly relates to the age of study participants – many were 17 or younger.

*Research question II. What is the relationship between pregnancy intendedness and social support?

Hypothesis I: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unwanted), pregnant women who wanted this pregnancy perceive more support for the pregnancy from significant others (baby's father, family, friends).

Support received from the father of the baby was highly significant. Fischer et al

(1998) found similar results in their study - the partner's attitude toward the pregnancy was very important in categorizing the pregnancy as intended and wanted. It is interesting to note that the father of the baby, in this study, was supportive of the pregnancy regardless of its intendedness. If the woman lived with the father of the baby, it was most likely a supportive relationship with an intended pregnancy. This is possibly related to the marital status of the couple.

Hypothesis II: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unwanted), pregnant women who wanted this pregnancy are more likely to have supportive relationships.

Family and friend support was also found to be significant when related to pregnancy intendedness. It is interesting to note, however, that instrumental support from the father of the baby was significant in association with pregnancy intendedness – support from friends or family was not found significant. Similarly, the amount of correspondence with the family was not significant, but the amount of correspondence with friends was found to be significant. Emotional support was also only significant when received from friends, not from family. A large number of women with unintended pregnancies also reported receiving low support from the father. This was also seen in another study (Orr, 1997). Teens with a better relationship with the father, were more likely to have an intended pregnancy (Rubin, 1999).

Hypotheses I and II were confirmed, those with more support were more likely to

have an intended pregnancy. Those with supportive relationships and perceived support were more likely to report an intended pregnancy.

*Research Question III: What is the relationship between psychological indicators and pregnancy intendedness?

Hypothesis III: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unintended), pregnant women who wanted this pregnancy are more positive about the pregnancy.

The only psychosocial factor found significantly related to pregnancy intendedness was the mother's feelings about this pregnancy. The other psychosocial factors (depression, self-esteem, and perceived stress) examined were not found to be significant when compared to pregnancy intendedness.

Hypothesis III was confirmed, those women that felt positive about their pregnancy were significantly more likely to have a wanted pregnancy.

Hypothesis IV: Compared to those pregnant women who do not want a pregnancy at the present time or in the future (unintended), pregnant women who wanted this pregnancy have more favorable psychological indicators (less depression, less stress, better self-esteem).

These were the most surprising results found in the study. Orr (1997) found that those who reported higher levels of depressive symptoms and low self-esteem were more likely to report an unintended pregnancy, whereas in this study, there was no significance found between self-esteem, stress or depression and pregnancy intendedness.

Hypothesis IV was rejected. No significance was found when relating

psychosocial factors and pregnancy intendedness.

Limitations

This study must be viewed in light of its limitations. All of the data were collected in personal interviews which are subject to all of the biases associated with self-reported information. A non-random sample was used in this study. Women chosen for the study were those within close proximity to the research team although similar characteristics were found in women throughout the state in the MOW program. Third, selection bias may have been present due to the somewhat different referral patterns used by the health departments and community health centers that housed the MOW program since they had considerable autonomy in the program.

Implications For Community Health

Achieving the lofty goal that all pregnancies are intended will require the adoption of new behaviors. Strategies to do so should be similar to the broad-based strategies used in smoking cessation and seat belt intervention programs. But because sexual behavior is a private one and is often surrounded by controversy, efforts to promote a new childbearing norm will clearly be more difficult than changing views on seat belt use.

It is also important for a uniform questionnaire to be developed to assess the complex issue of pregnancy intendedness. Statistics on pregnancy intendedness can not be accurately reported until this reporting system is developed.

Further research is needed to examine the effectiveness of current family planning programs. Programs must be multi-faceted, providing supplies, and information on the

importance of a planned pregnancy.

The results of this study emphasize the importance of social support in pregnancy. Medical providers and social service workers should consider this when working with women and their significant others in the prenatal period. Supportive relationships were found to have an impact on the intendedness and wantedness of the pregnancy. It is important to consider the needs of the father of the baby when providing prenatal care. Strategies to incorporate the family, father of the baby, and friends in support tactics for the mother of the baby is needed to better her health and baby's health and her psychosocial well-being.

Public discussion of the topic of unintended pregnancy is a necessary first step in solving this problem. The solution will require an understanding of and commitment to the belief that every pregnancy should be clearly desired at the time of conception.

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APPENDIX A: Epidemiologic Studies Depression Scale: CES-D

How many days (0-7) during the past week have you:

- a. been bothered by things that usually don't bother you
- b. not felt like eating; your appetite was poor
- c. felt you could not shake off the blues even with help from your family or friends
- d. felt that you were just as good as other people
- e. had trouble keeping your mind on what you were doing
- f. felt depressed
- g. felt that everything you did was an effort
- h. been hopeful about the future
- i. thought your life was a failure
- j. felt fearful
- k. had sleep that was restless
- l. been happy
- m. talked less than usual
- n. felt lonely
- o. thought that people were unfriendly
- p. enjoyed life
- q. had crying spells
- r. felt sad
- s. felt that people disliked you
- t. felt you just couldn't get going

APPENDIX B: Cohen's Perceived Stress Scale

In the past month have you:

- a. been upset because of something that happened unexpectedly?
- b. felt that you were able to control the important things in your life?
- c. felt nervous and "stressed"?
- d. dealt successfully with irritating life hassles?
- e. felt that you were effectively coping with important changes that were occurring in your life?
- f. felt confident about your ability to handle your personal problems?
- g. felt that things were going your way?
- h. found that you could not cope with all the things that you had to do?
- i. been able to control irritations in your life?
- j. felt that you were on top of things?
- k. been angered because of things that happened that were outside of your control?
- l. found yourself thinking about things that you have to accomplish?
- m. been able to control the way you spend your time?
- n. felt difficulties were piling up so high that you could not overcome them?

APPENDIX C: Rosenberg Self-Esteem Scale

For each of the following statements, please tell me whether you strongly agree, agree, disagree, or strongly disagree with it.

- a. I feel I have a number of good qualities.
- b. I feel I do not have much to be proud of.
- c. I am able to do things as well as most other people.
- d. I wish I could have more respect for myself.
- e. I certainly feel useless at times.
- f. At times, I feel I am no good at all.
- g. I feel that I am a person of worth at least on an equal basis with others.
- h. I take a positive attitude toward myself.
- i. All in all, I am inclined to feel I am a failure.
- j. On the whole, I am satisfied with myself.