EFFECTIVENESS OF A MULTIDISCIPLINARY PROGRAM ON BIRTH WEIGHT AND FAMILY OUTCOMES FOR AN ADOLESCENT POPULATION: A COMPARATIVE STUDY

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Effectiveness of a Multidisciplinary Program on Birth Weight and Family Outcomes for an Adolescent Population: A Comparative Study

by

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This thesis was prepared under the direction of the candidates' thesis advisor, Dr. Lynne M. Hektor, Department of Nursing, and has been approved by the members of her supervisory committee. It was submitted to the faculty of the College of Nursing and accepted in partial fulfillment of the requirements for the degree of Master of Science in Nursing.

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ABSTRACT

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The high rate of adolescent pregnancies and births in the United States has had an extensive impact on individual, family, community, and national issues related to health and economics. Teenagers, many of whom are already of lower socioeconomic status, are at risk for preterm birth and low birth weight, as well as incomplete use of available services.

This inquiry used a retrospective comparative research design to evaluate the effectiveness of Project Teen in Palm Beach County, Florida. Project Teen is a multidisciplinary program offering a continuum of support services to pregnant adolescents and newly parenting adolescents and their infants until the infants are 2 years old. Through frequent contacts, home visitation, resource referral, counseling, and education the health care professionals collaborate with the clients to facilitate clients' choices which will maximize families' health potential. Home visitation by care coordinators and senior community health nurses was positively related to pregnancy, family health, and family socioeconomic outcomes.

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Chapter I

Introduction

The United States has had an alarming teenage pregnancy rate, the highest in the developed world, and correspondingly also suffers from exceedingly high abortion and infant mortality rates. One in ten women between the ages of 15 and 19 become pregnant each year, amounting to over one million pregnant adolescent women each year. Estimates regarding the future adolescent pregnancy rates predict that of all 14 year olds, nearly 40 percent will be pregnant at least once during their adolescence (Atwood & Donnelly, 1993).

The poor performance of the United States on infant mortality rates, universally accepted as an indicator of a nation's health, is due in large part to the high numbers of teen pregnancies. Adolescent mothers do not routinely use prenatal care, often eat poorly, frequently have low birth weight babies, and have more unplanned and unwanted pregnancies (Smith, 1994). Chen, Felleen, and Chen (1995) stated that inadequate prenatal care is more prevalent among low income women, especially among adolescent African American women. In addition to inadequate prenatal care, low-income African American pregnant adolescents face difficult social situations such as coping with single parenthood and living in an urban environment.

Several studies have shown that there is an association between young parenthood and larger family size, poor education, low achievement, permanently lower incomes, unemployment, and welfare status (Smith, 1994; Archer & Cahill, 1991; Olds, 1988). Although the decision to prevent an unintended adolescent pregnancy is a key

factor in the young person's capability to establish self-sufficiency, many adolescents fail to make careful fertility decisions. Changes in society such as patterns of marriage, family structure, media portrayal of sexuality, and substance abuse can all combine to impact on the fertility decisions of adolescent teenage girls (Smith, 1994).

In response to the consistently high rates of teenage pregnancy and young-adolescent single parent families, Olds (1988) proposed a new strategy based on an ecological perspective. The ecological model postulated that there is interdependence among the social systems of marital dyad and parent-child dyad, family system as a whole, and the larger socioeconomic community. One implication of this model is that the health habits and caregiving behaviors of disadvantaged parents need to be understood in context. The Olds strategy was operationalized as a prenatal-early infancy project in Elmira, New York. High risk families were offered a home visitation program by community health nurses which systematized environmental influences on prenatal health habits, qualities of infant caregiving, and the child's health and development up to the age of two years. Prenatal education, enhanced informal support, and linkage to services provided positive effects in birth weight and length of gestation in very young teenagers, ages 14 - 16 years (Olds, 1988).

Home visitation to pregnant women and parents of young children is a strategy that has captured the attention of policy and program planners concerned with maternal and child health (Expert Panel in the Content of Prenatal Care & US Advisory Board on Child Abuse & Neglect; 1990, US General Accounting Office, 1990). After review of the results of experimental studies with randomized trials on the effectiveness of home visiting programs, Olds and Kitzman (1993) concluded that while data on program effectiveness for particular populations range from the spectacular to the disappointing, the potential value of home visiting has only begun to be demonstrated with existing research designs, methods, and program models. Many of the existing studies have

failed to measure what the programs have tried to effect. Further study is needed to clarify the impact of the home visitor-parent relationship, role of program content, and the frequency, timing, and duration of visitation on program success (Olds & Kitzman, 1993).

Purpose of the Study

This inquiry studied Project Teen, a multidisciplinary collaborative program, which serves adolescent pregnant women and new mothers in Palm Beach County, Florida until their focus children reach two years of age. As in other parts of the country, teenage pregnancy in Palm Beach County has significant health and social consequences. Teens are likely to be unmarried, non-white, and to have poor birth outcomes. They frequently live in poverty, are less likely to pursue further education, and are less likely to seek prenatal care. Project Teen addresses the consequences of adolescent pregnancy by offering to teens under 19 years of age a continuation of comprehensive services provided by three agencies who work in collaboration. The agencies are HRS/Palm Beach County Health Unit (P.B.C.H.U.), Healthy Mothers-Healthy Babies, and the School Board of Palm Beach County.

A retrospective comparative design was used to study Project Teen, which has clearly stated objectives, short term goals, long term goals, and community impact plans. (Model, Appendix D). Each adolescent joining the program is given an intake assessment and community resource utilization screening, participates in forming a family support plan, and is assigned a senior public health nurse and care coordinator. The HRS/Palm Beach County Health Unit (P.B.C.H.U.) coordinates the health care, community health nurse component of the program which cooperates with Healthy Mothers/Healthy Babies provision of intake assessment and community resource utilization. The School Board coordinates the educational and vocational component. Program funding is through the Children's Services Council of Palm Beach County. All

three agencies collaborate with the pregnant teen and her family (significant other) to coordinate a comprehensive Family Support Plan (F.S.P.).

Statement of the Problem

This study addresses these questions:

1) What is the effectiveness of Project Teen, a multidisciplinary program, for a participating adolescent pregnant population on birth weight, prenatal visits kept, and post partum visits kept? Compare the results with two similar groups of non-visited adolescents.

2) Within the participating group, is there a relationship between number of visits (home visits, total contacts, and nursing visits) to outcomes on pregnancy and family socioeconomic and/or health outcomes?

3) Are pregnancy, family health, or family socioeconomic outcomes related to care source, either private doctor including HMO, P.B.C.H.U., or a combination of both?

This study addressed these objectives:

1) To determine the effectiveness of Project Teen, a multidisciplinary program including home visits, on pregnancy outcomes for a participating adolescent pregnant population, and to compare the results with the pregnancy outcomes in two similar comparable groups of non-visited adolescents. Pregnancy outcomes are infant birth weight, prenatal appointments kept, and post-partum appointments kept.

2) To determine whether, within the participating group, there is a relationship between the number of home visits, the number of total program contacts, or the number of nursing visits and the outcome variables. The outcome variables compared were birth weight, prenatal visits, well baby appointments kept, goals met on the Family Support Plan (F.S.P.), current immunizations, consistency of child care site, linkages to community services such as WIC or Medicaid, appropriate career program,

staying in school, returning to school, or graduating, and no subsequent pregnancies for 18 months after delivery.

3) To determine whether for the participating group the source of care, private doctor, versus P.B.C.H.U., was related to a difference in pregnancy outcome, such as birth weight, prenatal appointments kept, and post partum appointment kept, or related to a difference in family outcome, such as well child care appointments kept, current immunizations, consistency of child care site, appropriate career program, appropriate school, and no subsequent pregnancies for 18 months.

The measured outcome variables were:

1) Question 1 variables are:

Pregnancy related outcomes

birth weight

prenatal visits kept (total)

post partum visit kept

2) Question 2 outcomes are:

Pregnancy related outcomes

birth weight

prenatal visits kept

Family health related outcomes

well baby appointments kept

consistency of child care site

infant immunizations current

no subsequent pregnancies for 18 months after delivery

Family socioeconomic related outcomes

goals on the Family Support Plan (F.S.P.) met

appropriate career program

appropriate school

community services linkages

3) For question 3, the variables considered were the same as for part 2. Definitions are included.

Pregnancy related variables described:

birth weight - recorded in pounds, for each infant at delivery

prenatal appointments - a dependent variable recording visits kept

post partum appointment kept - a nominal dependent variable indicating whether client attended

Family related health outcome variables described:

Consistency of Child Care - Project Teen accepts as appropriate no change in child care site after first registration at child care location. A nominal dependent variable.

Immunizations - Refers to 100% of the scheduled infant immunizations being kept up to date. A nominal variable.

No Repeat (Subsequent) Pregnancy - A nominal dependent variable referring to the non-recurrence of pregnancy for 18 months after delivery.

Well Baby Appointment Kept - A dependent variable (nominal data) referring to compliance with well baby care.

Family related socioeconomic variables described

Appropriate Program - Project Teen refers to appropriate activity in job or career training or choice of work. A nominal dependent variable.

Family Support Plan (F.S.P.) - A care plan set up individually with and for each pregnant family and significant others to organize the visitation,

teaching, linkage, and health agenda and to clarify goals to be evaluated.

Linkage to Services - Client completed connection with referred external (community) resources. A dependent variable. Integral data.

School Activity - Project Teen considers school activity by the adolescent as return to school, continuation in school, resuming G.E.D. or graduation. A nominal dependent variable measured by satisfactory or unsatisfactory.

Inquiries into these questions will demonstrate the effectiveness of Project Teen.

Chapter II

Conceptual Framework

Introduction

Empowerment, a multidimensional concept, has been selected to structure this inquiry. Empowerment is defined as process and outcome, encompassing aspects of both. Health, as an empowerment process through education will be described as theoretically grounded in the framework of Margaret Newman's health as expanded consciousness. The Newman model suggests that persons are continuously evolving to higher levels of conscious organization, so their decisions are highly personal and relational. The empowerment process in public health as described in 1992 by Zerwekh is an application of the personal and relational helping philosophy in action. Empowerment defined as process is operationalized as the provision of educational resources during the home visits and health visits of Project Teen. Empowerment as outcome is measured as adolescent pregnancy outcomes in the study.

Definition of Empowerment

Jones and Meleis (1993) discussed a model of empowerment in which health is defined as "being empowered to define, seek, and find conditions, resources, and processes to become an effective agent in meeting the significant needs of individuals" (Jones & Meleis, 1993, p. 12). They further stated that health is empowerment when persons are enabled to become well and whole, to develop potential, or to add quality to life. Health as empowerment addresses peoples' rights for resources, strengths, responsibilities, and the availability of options, and is shared across individual, contextual, and political boundaries (Jones & Meleis, 1993). Gibson, in 1991, remarked

that the World Health Organization in the 1980's, had defined health promotion as a process of enabling people to increase control over and improve their own health. She, therefore, defined empowerment as "a social process of reorganizing, promoting, and enhancing people's abilities to meet their own needs, solve their own problems, and mobilize the necessary resources in order to feel in control of their lives" (Gibson, 1991, p. 359). Simply stated, empowerment is a process whereby people learn to assert control over factors affecting health (Gibson, 1991).

As a concept, then, empowerment has characteristics of process and of outcome. It is contextual, since it takes on different definitions for different people at different times. It is transactional because it depends on people's relationships with each other, and it is viewed within a synergistic framework as interrelated people share resources and cooperate toward a mutually beneficial end. Empowerment focuses on solutions, and is a positive dynamic concept. Empowerment is relational in that extreme variation exists in process and outcome at any time and with any group, and it is developmental when individual or group growth and potential are enhanced. The empowerment process involves helping individuals develop awareness of the root causes of their problems and the readiness to act on that awareness (Gibson, 1991).

In the empowerment process, the nurse becomes the facilitator and resource person to support and strengthen individual, family, or community functioning. Health is unique to individuals and individuals have the responsibility for their own health. Individuals capacity for self determination must be respected, because health care professionals do not empower people or give power to people. People can only empower themselves. Therefore, we must all nurture the community and sharing necessary to allow for mutual respect and trust (Gibson, 1991). The client perspective, prerequisite to the empowerment process, requires that the individual or group be in a

situation which could lead to the experience of lack of, or loss of, power needed to affect a best potential outcome.

Theoretical Foundation - Nursing Theory

Margaret Newman's Theory of Health as Expanding Consciousness provides the framework by which I view education as empowerment to health. Newman envisions a holistic view of health in which pattern is the essence in the flow of life. By continuously evolving toward greater complexity, with contradictions, ambiguities, and paradoxes, each individual synthesizes insights that lead to ever expanding consciousness (transformation). Pattern recognition is the spontaneous insight in relation to shift of organizational complexity, affording freedom and variety in responses to situations. Newman claims that pattern recognition comes from within the individual, which means that, given any set of circumstances, an infinite number of patterns are possible. Events unfold over time and are not predictable. The pattern depicts the whole understanding of the meaning of all relationships at once. Expanding consciousness is the evolving pattern of the whole, and is health. It is characterized by choice points and movement to higher levels of organization (Newman, 1986; Marchione, 1993).

According to this emerging paradigm the health care professional engages in pattern recognition with the person, interacting and assisting the client to determine the meanings of relationships. The person is respected as an autonomous participant, and the health care professional as a therapeutic partner. The person represents an integrated whole, the interaction of mind, body, and environment. The professional and person are co-participants in the experience of pattern recognition with nurse as facilitator. The process of transformation through pattern recognition is the essence of practice as we become partners in health through negotiation and reciprocity (Newman, 1986; Kalb, 1990).

Empowerment as Education: Public Health

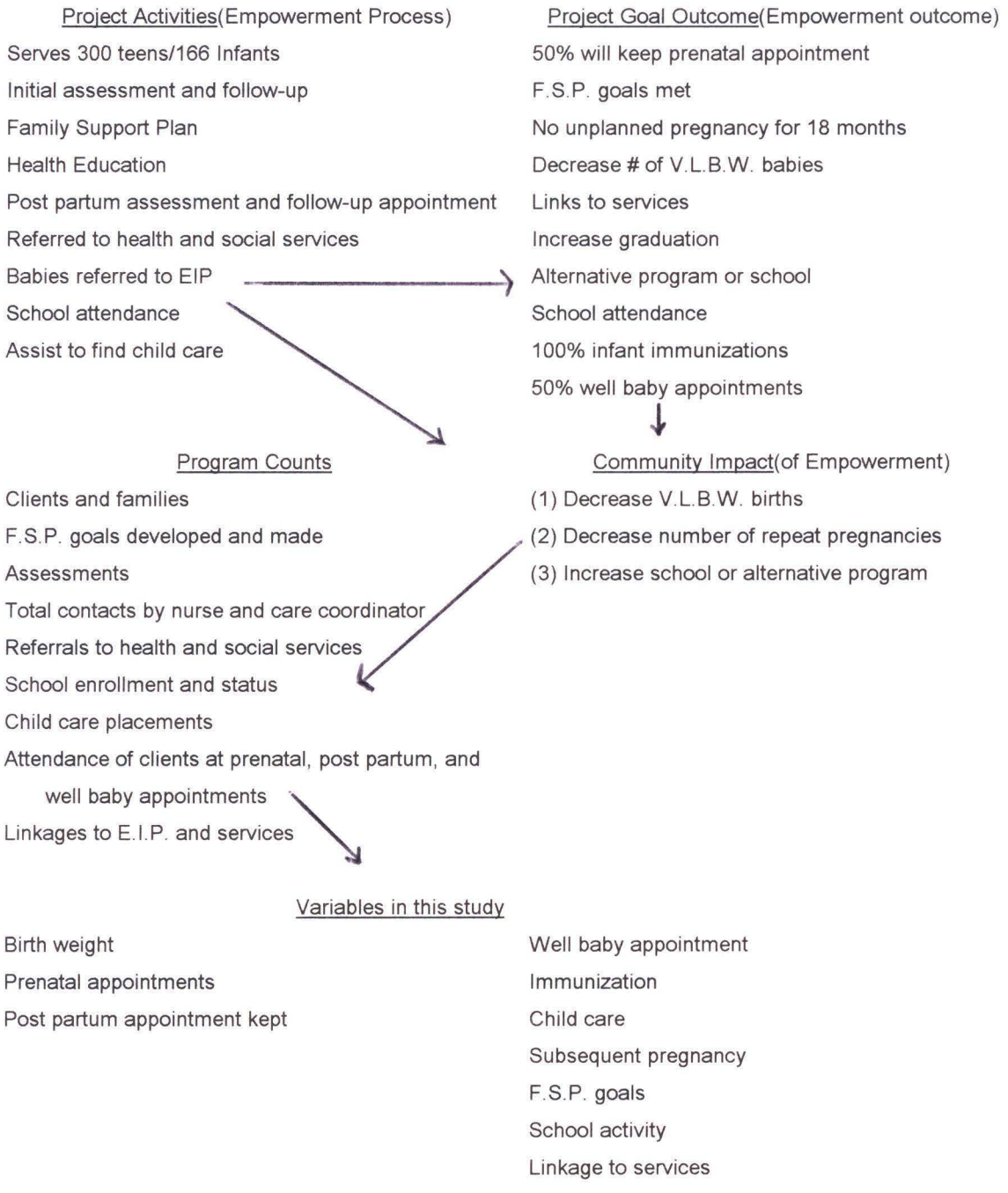
Empowerment as a helping process, according to Zerwekh, 1992, enables persons to take charge of life, to make choices and to believe that they can influence the future. Power grows out of self-esteem that has been developed through interrelationships characterized by love affirmation, clear expectations, appropriate role models, opportunity for choice, and perceived meaning and hope. In other words, experiences of interconnectedness, lead to knowledge of one's place, and then to empowerment. These developmental experiences are frequently lacking in the high risk group of persons seen by public health professionals. Empowerment strategies affirming client responsibility and capacity for autonomy can be fostered through mutual participation exchanges. First, the nurse must believe that the client or family has choices, and must communicate this belief to the client. The professional should listen long and hard to the client's concerns and not impose her own agenda, must expand the client vision of realistic possibilities, and must encourage feed-back. The important, or crucial, thread in the interaction is that the professional is always an enabler and teacher, not a director of the other's health decision (Zerwekh, 1992).

Empowerment as Process and Outcome: Project Teen

These empowerment strategies described by Zerwekh (1992) are central to and incorporated in the plan to operationalize empowerment in the project being studied. The empowerment process enables and mobilizes internal and external resources in the delivery of services by Project Teen. Empowerment as process takes place in the home visit encounter of public health nurse and social worker with the adolescent as they mutually collaborate for positive outcomes and goals as perceived by the client. The health care professionals provide educational resources which may facilitate the adolescents knowledge of more realistic choices, and the adolescent parent acts on this knowledge with behaviors that affect pregnancy and family outcomes. The process

of expanding consciousness results in empowerment as improved outcomes for individual and family.

Empowerment Operationalized by Project Teen



Review of the Literature

Review of the Literature on Empowerment

A review of the literature points out the critical characteristics and defining attributes of the concept. While the concept is almost becoming a cliché in reference to women and other groups, only recently have there been serious attempts to clarify and explicate the concept (Gibson, 1991; Jones & Meleis, 1993). Empowerment is more easily understood by its absence (as in powerlessness, helplessness, subordination, and loss of control) than by the definition of its attributes. Empowerment encompasses people's rights, strengths, and abilities implying competence to develop potential (Jones & Meleis, 1993). It is associated with such concepts as coping skills, mutual support, support systems, community organization, neighborhood participation, personal efficacy, competence, self-sufficiency, and self-esteem (Keiffer, 1984).

In a Collins dictionary (McLeod, 1987), empowerment is defined as giving power or authority to, giving ability to, enabling, permitting. Webster (1977) described empowerment as enabling or giving authority and ability to do something. It is transactional, involving interaction and relationships with others, and incorporates environmental and individual change through collaboration and sharing (Gibson, 1991). The word empowerment stems from the Latin word poteré, meaning to be able.

Kieffer (1984) described empowerment as a process of becoming and of progressive development. In discussing empowerment for role alternatives in adolescence, Simmons and Parsons (1983) stated that facilitating empowerment begins with helping persons develop a critical awareness of their situation and enabling them to master their environment to achieve self-determination.

Gibson (1991) redefined empowerment as a social process of recognizing, promoting, and enhancing peoples abilities to meet their own needs, solve their own problems, and mobilize necessary resources to take control of their own lives.

Empowerment is a process of helping people assert control over their own lives (Gibson, 1991). The nurse in Gibson's empowerment model is a resource person and mobilizer, facilitating access to personal and environmental resources that foster a sense of control and self-efficiency and support health. Synonyms for power are energy, described as natural power and the capacity of being active, strength, efficacy, and effectiveness implying "power" to (Hawks, 1991; Meleis, 1993). Hawks (1991) described power as the actual or potential ability or capacity to achieve effectiveness through an interpersonal process in which the goals and means to achieve the goals are mutually established and worked towards. She used King's theory of goal attainment to derive assumptions critical to the uses of power, which she viewed as goal directed. Josefowitz (1980) distinguished between power as forcefulness and effectiveness, and described power as the capacity (role) and ability (competence) to achieve objectives and help others to formulate goals and the means to achieve them. Wheeler and Chinn (1989) contrasted the patriarchal "power-over-others" view with the feminist alternative perspective, describing power as a process requiring participation and including co-operation, respect for the individual's beliefs, and shared leadership and decision making (Wheeler & Chinn, 1989).

Brown and Schultz, in 1991, observed that health is an outcome of empowerment. In their study, administrators who experienced empowerment described positive health in the form of greater energy and well-being. Person's who had felt consistently overpowered were at risk for negative health outcomes (Brown, 1991). The resultant greater energy and well-being as empowerment outcomes for health is consistent with Benner and Wrubel's (1989) description of health as the whole person's potential.

The centrality of the public health process of encouraging self-help is consistent with the definitions of empowerment to promote client choice and self-determination

(Zerwekh, 1992). Zerwekh (1992) defined empowerment as enabling a parent to develop personal capacity and authority to take charge of life. The central purpose of the public health home visit is this basic process of encouraging self help (Zerwekh, 1992).

Judith Igoe (1991) provided an informative overview of social trends and research related to empowering children and youth to participate actively in their own health care. She called for renewed attention on the part of health care practitioners and researchers to develop innovative approaches for enhancing young peoples participation in care, self-confidence in health encounters, and sense of control of personal health (Igoe, 1991).

Review of the Literature on Pregnancy Outcomes

Over the past 25 years, literature related to pregnancy outcomes in high risk populations has grown. There has also been a growing awareness that adolescent pregnancy contributes to a multitude of individual, family, and community, social and economic problems. Research evidence concerning the effectiveness of home visits on pregnancy outcomes for the teen mother and her infant is still in the very early stages. However, some correlation's between professional (or paraprofessional) visits and positive outcomes have already been reported for specific programs in various parts of the country (Albers, 1994; Julnes, et al, 1994; Olds & Kitzman, 1993).

In 1985, The Institute of Medicine published a report entitled, "Preventing Low Birth Weight", which defined and described the significance of low birth weight, the data and etiology and risk factors, and the preventative approaches found most desirable with their costs. They concluded that prenatal care decreases the frequency of low birth weight. There has been a significant amount of early research on preventing low birth weight and preterm birth demonstrating inconclusive results (Creasy, 1988; Iams, et al, 1987; Papiernik, et al, 1986; and Institute of Medicine, 1985).

In 1971, France adopted and provided funding for a national perinatal policy with the goal of reduction of preterm births by provision of specific multisite preterm prevention programs. The program included paid work leave beginning at 34 weeks, monetary payments for early prenatal care, free obstetric care, household help when needed, weekly follow-up for at-risk cases at home by nurse midwives, and oral progestin or cervical cerclage if indicated. A report by Papiernik suggested a significant decrease in preterm birth rate as measured by gestational age, and a corresponding decrease in rates of infant births with weights < 2500 grams (Papiernik, et al, 1986) related to women's acceptance of The New Preterm Prevention Program as measured by changes in behaviors towards prenatal care. Papiernik (1986) suggested that programs reaching the general population to influence attitudes toward prenatal care may be more successful in diminishing preterm birth without regard for socioeconomic status difference.

At the University of California, San Francisco, Preterm Prevention Program, Creasy, et al, (1982), conducted a longitudinal study testing the effectiveness of a longitudinal education program for patients at risk for preterm labor and for health care providers of obstetric care. Focusing on self detection of early signs of preterm labor to allow for expedient treatment by tocolytic therapy, overall the California program saw 50 - 60% reduction in premature deliveries and a decrease of 70% in morbidity and mortality (Creasy, 1988).

In a 1987 randomly assigned prospective trial designed to demonstrate the effectiveness of uterine activity monitoring in pregnancies at risk for preterm labor, Iams, et al, (1987) compared the rate of preterm birth, the incidence of preterm labor and successful tocolysis, and the mean birth weight and gestational age in two groups. Group 1 had frequent nursing contact (>5 days/week), education in preterm labor symptoms, and self-palpation of uterine activity. Group 2 received the Term Guard

home uterine activity monitor and did self palpation. Comparison of outcomes indicated no differences in the two groups, leading the researchers to conclude that intensive patient education and frequent nursing support were likely responsible for the positive results formerly attributed to the monitoring device (Iams, Johnson, O'Shaughnessy, & West, 1987).

Home Visitation to Pregnant Women and Families

While there are numbers of early studies addressing prevention of preterm labor, low birth weight, and associated risk factors, there are very few early studies examining the effectiveness of programs including public health nurse home visits (or any home visits) on pregnancy or family health outcomes. Prior to 1986, most evaluation studies generally provided no positive results on the effectiveness of public health nursing home visits in maternal and child health. They concluded, at best, that there is little evidence, except in certain situations, of significant positive impact on health outcomes (Combes-Orme, Reis, & Ward, 1985).

Barkauskas (1983) studied the effects of public health nurse post-partum visits comparing health outcomes for 67 randomly selected mother-infant pairs receiving services with 43 pairs who had not received them. Outcome variables included mother's health and human services utilization, infant's health and health services utilization, and mothers parenting practices. The study found no significant difference between the home-visited pairs and the non-home-visited pairs, but Barkauskas (1983) suggested a need for further research of public health nursing services to justify home visiting as a therapeutic event.

The Prenatal/Early Infancy Project carried out in a semi-rural county in the Appalachian region of New York State provided some of the first evidence that a comprehensive program of home visitations by nurses can improve maternal behaviors and pregnancy outcomes. The program included not only home visitation, but also

informal and formal community support systems for families at risk for bearing and rearing children at risk (Olds, 1988). It was established to improve women's prenatal health habits, infant care giving skills, social support, use of community services, and educational and occupational achievements, while helping women to reduce unwanted pregnancies. Changes in maternal behavior and experience were expected to lead to reduction in child health disorders including prematurity and low birth weight, growth and nutritional problems, accidents, ingestions, acute infectious diseases, cognitive delays, behavioral problems, abuse, and neglect (Olds, 1988).

The program participants had no previous live births and were of young age, single parent status, or low socioeconomic status. After receiving prenatal parent education, enhancement of the women's informal support systems, and linkage of the parents with community resources, the visited women became more informed concerning community services, attended childbirth classes more frequently, utilized WIC nutritional supplementation program more, made greater dietary improvements, reported that their baby's fathers took a stronger interest in the pregnancies, were accompanied to labor by a support person more often, and had fewer kidney infections. Positive reports were also noted on birth weight and gestational age for offspring of adolescents (Olds, Henderson, Tatelbaum, & Chamberlin, 1986).

Olds (1988) concluded that results indicated home visitation is a useful vehicle for delivery of prevention services. By approaching pregnancy and early child rearing from an ecological perspective, nurses were able to achieve considerable leverage in improving pregnancy outcomes (Olds, Henderson, Tatelbaum, & Chamberlin, 1986) maternal life course development, as well as quality care giving (Olds, et al, 1986). In an analogous way, by linking parents with other health and human services, the nurses helped to reduce many of the stresses that lead to maternal depression, poor prenatal

health habits, and interference with caregiving (Olds, 1988). These aspects of the program likely contribute to the reduction of child abuse and neglect.

In a 1993 paper, David Olds and Harriet Kitzman reviewed the results of the experimental research literature concerning the effectiveness of home visiting programs for improving the lives of children and families. Their extensive review concentrates on randomized trials, those most methodologically rigorous studies where families are randomly assigned to one of at least two groups, the one receiving home visitation or the one receiving care as usual. The authors concluded that while home visiting is a promising approach, all too often this promise has not been clearly demonstrated (Olds & Kitzman, 1993).

Since 1986 research reports concerning effectiveness of the home visit approach in serving pregnant mothers and their infants have appeared in the literature showing some positive results. The Dawson (1991) Colorado study reported that mother-infant interaction was better at 4 months in paraprofessional home-visited families than in non visited controls, especially with teen and Hispanic visited mothers and other subgroups. Poland, Giblin, Waller, and Hankin (1992) reported results of a program in which Detroit, Michigan specially-trained paraprofessionals visited clients of similar educational background and ethnicity. They found that women followed by a paraprofessional had significantly more prenatal appointments (8.0 versus 6.5) and infants with average higher birth weight. Starn (1992) reported on a program of community health nursing visits for at risk participants in Hawaii. Over 20% of participants admitted mild to moderate abuse of alcohol, cigarettes and/or street drugs during early pregnancy. Counseling and supportive intervention established rapport and encouraged women to develop and maintain healthy lifestyles. Results indicated that substance abuse stopped, or substantially decreased during intervention, and mothers in intervention groups had fewer perinatal complications and better parent-infant

interaction scores than the controls, supporting other results that home visitor programs foster more healthy pregnancies (Starn, 1992).

In New Mexico, a retrospective study of data from the 1988 National Maternal and Infant Health Survey compared characteristics of New Mexico women with women all in the southwest and with all American women to identify what factors contribute to favorable birth outcomes in New Mexico. Rates of low birth weight and infant mortality in New Mexico remain at or below those for all American women, although child bearing women in New Mexico possess several characteristics known to be associated with poor pregnancy outcomes; late entry into prenatal care and few visits, a high rate of teen pregnancy, low family income, and ethnic and minority group membership. Observed differences between New Mexico women and the women in the southeast or all American groups that warrant further study were: a high proportion of births to Hispanic women, greater gestational weight gain, a high rate of participation in Special Supplemental Food Program for Women, Infants, and Children (Albers, 1994).

Health care reform in the United States has influenced hospitals to shorten postpartum stay and has increased the need for postpartum home care (Evans, 1995). Prolonged hospitalization of low birth weight newborns, in any case, places them at risk for a number of psychological complications (Shapiro, 1995). A randomized trial of earlier hospital discharge with community based nursing follow-up and intervention was performed and reported by Shapiro in 1995. Community-based, in home, public-health nursing and homemaker services were provided on an individualized basis according to assessed need. A significantly higher number of nurse visits and telephone contacts were made. Results showed that a community-based program that provided individualized support and education to families of low birth weight infants was safe, cost-effective, and had a positive effect on the home environment (Shapiro, 1995). This evidence supported the findings of the landmark 1986 study by Brooten, et al, which

concluded that early discharge of very low birth weight infants, with follow-up care by nurse specialist in the home, is safe and cost effective.

Home Visits to Pregnant Teens

The Resource Mothers Program of Norfolk, Virginia is a community based lay home visitation initiative for pregnant adolescents supporting disadvantaged teens through the use of para-professional home visitors who are similar to the teens in race and socioeconomic status. In addition to recruiting mothers into the program and encouraging early prenatal care, the program provided teen mothers and their families with practical help and increases community awareness regarding infant mortality and adolescent pregnancy (Julnes, Konefal, Pinder, & Kim, 1994). This currently active program was compared with a traditional clinic based multidisciplinary program (MDP) using health professionals. The Resource Mothers Program reached a higher percentage of high risk adolescents, promoted a higher level of prenatal care, and resulted in pregnancy outcomes that favored the MDP but were comparable (Julnes, Konefal, Pinder, & Kim, 1994).

According to Scholl, Hediger and Belsky (1994), pregnant adolescents may have increased risks of certain potentially serious conditions compared with mature women. A number of studies have demonstrated that adequate prenatal care is associated with improved pregnancy outcome in teenagers, as well as for mature women, but the components of care reducing risk need to be sorted out. The authors have conducted a meta-analysis, which suggests that preterm delivery and possibly the preterm labor which frequently precedes it are associated with young age. Preterm delivery is a potent risk factor not diminished over time and closely associated with increased risk of infant low birth weight, neo-natal mortality, and other poor infant outcomes. Behavioral risk factors, such as maternal smoking, drinking and drug use appear to be less common among teenage gravidas, particularly when the young

women were ethnic minorities. Comprehensive prenatal care for teenage gravidas was associated with diminished risks of PIH, preterm delivery, and cesarean delivery. For postpartum teenagers enrolled in comprehensive care programs there was noted a greater likelihood of returning for check-ups and less chance of experiencing a repeat pregnancy within two years. It appears that at least some simple interventions which form the basis of comprehensive care are probably effective, and should be encouraged (Scholl, Hediger & Belsky, 1994).

In 1990, Jones and Bonte offered a conceptual model defining adolescent pregnancy as a parenting problem that is multicausal and requiring multiple solutions, departing from the traditional single cause-single solution paradigm. Their community intervention model systemized a coalition effort that represented the helping systems of the health, education, and community environment, ensuring interaction among systems to benefit the pregnant adolescent and her family. Parenting is a continuum of experiences that requires cooperation of all systems (Jones & Bonte, 1990). In a 1993 publication, Atwood and Donnelly described a multi-systemic theoretical model of adolescent pregnancy utilizing interpersonal, family, and social processes and incorporating school, peer, family, and community services toward a comprehensive theoretical base for an intervention in teen pregnancy.

A 1994 publication by Vehvilainen-Julkunen of Finland serves as a reminder to us that we must always be aware that our interpretations as providers in areas of intervention in the community may vary from the perceptions of the recipients of care. The author studied the function of home visits in maternal and child welfare in Finland, as evaluated by providers and users. According to the results, the clients felt that the most important function of home visits was to have a competent professional evaluation of the infant. They also attached a great deal of importance to the information learned about growth and care of small children. The public health nurses, on the other hand,

felt that the most important function of home visits was to support and encourage parents and ensure continuity of care. Both sides felt there were advantages in home visiting, but both did not feel the client had a choice. Only about half the clients felt they selected the program they best preferred (Vehvilainen-Julkunen, 1994).

Summary

While over the last 25 years, the body of research literature on pregnancy outcomes has grown dramatically, there is still further study needed to clarify the effectiveness of programs designed to address needs of specific groups of pregnant individuals. Early literature focused primarily on pregnancy outcomes in high risk populations, seeking methods of preventing preterm labor and low birth weight (Creasy, 1988). Beginning with the 1980's landmark study by Olds in Elmira, New York researchers and program developers have attempted to design more comprehensive coordinated delivery programs to support disadvantaged pregnant women and their infants (Olds, 1983; Olds & Kitzman, 1988). More recent literature has described programs such as the Norfolk Resource Mothers Program, a home visit approach designed to address the teenage pregnancy needs, with mixed results (Julnes, Koneful, Pinder, & Kim, 1994). Since teens are described as particularly at risk for poorer pregnancy outcomes (Scholl, Hedeger, & Belsky, 1994) and family outcomes it is crucial to continue designing and studying programs which allow a continuation of care to pregnant teens.

Chapter III

Methodology

The Design

This retrospective study used a comparative design to evaluate Project Teen, a multidisciplinary collaborative program which services pregnant teens and their infants until the age of 2 years. Using existing records, the researcher assessed project effectiveness with respect to project outcome and impact goals (Appendix D).

The Research Questions:

1) Is there a difference in pregnancy outcomes for a group of teens receiving services including home visits from Project Teen compared to the outcomes for a group who delivered before joining Project Teen and compared to a group who never were in the program?

2) Is there a relationship in pregnancy outcome, health outcome, or socioeconomic outcome according to the number of home visits, total contacts, or nursing visits for the Project Teen participants?

3) Are outcomes related to care source that is, private physician, Palm Beach County Health Unit, or a combination of both?

The measured variables are:

Question 1)

birth weight

prenatal visits kept

post partum visit kept

Question 2)

birth weight

prenatal visits kept

post partum visit kept

well baby appointment kept

immunizations current

child care site consistency

no subsequent pregnancy for 18 months

F.S.P. goals met

linkages to community services

appropriate career plan

appropriate school plan

Question 3)

Same as for number 2

Definition of Variables:

Care Coordinator - Person assigned responsibility for organizing and individualizing the Family Support Plan with the client, and facilitating home visits and evaluation of progress. (See Appendix C).

Dependent Variables - The outcomes measured in this study. They are birth weight, school activity, immunizations of the child, prenatal appointments kept, post-partum appointment kept, well child appointment kept, service linkages, and no repeat pregnancies, as well as fulfillment of F.S.P. Goals which are individualized goals.

Empowerment - Operationalized as the program including home visit and consummated as outcomes or dependent variables.

Family Support Plan (F.S.P.) - A care plan set up individually with and for each pregnant family and significant others to organize the visitation, teaching, linkage, and health agenda and to clarify goals to be evaluated.

Home Visits - Visits by Project Teen senior community health nurses and social workers in person where contact was made. The frequency and duration is variable and not recorded in project data.

Independent Variable - The home visit by the health care professional with the pregnant adolescent or new mother, or other program contact.

(LBW) Low Birth Weight - Typically births occurring where infants weigh less than 2500 grams (<5.5 pounds) are labeled low birth weight.

Nurses - Senior community health nurses.

Paraprofessional - A lay person who has some knowledge to share with program participants by virtue of similar experiences or specialized training.

Preterm Births - Typically births occurring prior to the 37th week of gestation (<37 weeks) are labeled preterm births.

Project Teen - Project Teen is a collaborative between Healthy Mothers/Healthy Babies, the Palm Beach County Health Unit, and the School Board of Palm Beach County (This collaboration provides a continuum of services to pregnant and parenting teenagers and their infants).

Total Contacts - A summation of total contacts of health care professionals with adolescents including home visits, visits at other locations, and telephone calls.

(VLBW) Very Low Birth Weight - Infants weigh less than 3 pounds 8 ounces.

Sample

Subjects included as Project Teen Participants for this study participated in the project between October 1994 and October 1995. Eligibility requirements were: a) The client must be pregnant or a new parent; and b) The client must be under the age of 19

upon entry. The teen and her infant are served until the child's second birthday. In 1994-1995, Project Teen served 374 teenagers who were pregnant and/or parenting their children in a Palm Beach County area from Jupiter to Boca Raton, the majority of those receiving services living in the Children's Services Council geographically targeted areas, including the coastal communities with the highest rates of teen pregnancy (Lake Worth, Riviera Beach and West Palm Beach). The participating subjects, those who had delivered by October 1995, year end, totaled 274 adolescents. The remaining project teen participants had not delivered as of October 1995 or had otherwise experienced termination of pregnancy, miscarriage, or lost contact with the program. Of the project subjects, 176 delivered their babies after beginning services with Project Teen, and 98 delivered before receiving services. Those who delivered babies while in Project Teen and accepting services were called Group 1 for the study and were considered the participant group for question one of the study. Adolescents who delivered babies before joining or accepting services from Project Teen were considered Group 2, a control group, for question 1.

A group of 98 adolescents never in Project Teen, but similar to the Project Teen adolescents in that they were under 19 years of age, were pregnant and delivered in the 1994 - 1995 fiscal year, was collected by chart review on demographic data and question 1 variables from P.B.C.H.U. records at Delray and Riviera Beach. This group of 98 subjects never in the Program served as a second comparison group for groups 1 and 2 on the variables birth weight, prenatal visits kept, and post partum visit kept, question 1.

Data on the participant groups 1 and 2, all of whom were at some time active in Project Teen, were collected to answer question 2, whether home visits, total contacts, or nursing visits were related to variation in F.S.P. goals kept, school activity, career program, infant immunization status, well baby appointment kept, child care site

consistency, subsequent pregnancy, or linkage to services. The researcher used the same group to study question three addressing possible relationships between care source and these same variables.

Protection of Human Rights

To protect human subjects' rights, no data were used with subjects identity disclosed, but data were used in reports by statistical groupings, only. However, project participants have signed consent to release information forms which allow exchange of files among the agencies which form the Project Teen Collaborative during their activity in the project, and to allow collection of records from social, medical, psychological, academic, and developmental sources. (Appendix B.)

Data Collection

Data were collected by record review at the Palm Beach County Health Unit and Healthy Mothers/Healthy Babies Coalition of Palm Beach County. Written permission forms were signed by both agencies to allow access to records. (Appendix B).

Collection of data on program participants was from computerized records of Healthy Mothers/Healthy Babies. Demographic variables, age, race, area of residence, health care source, parity and marital status, and date of program entry, delivery, and program completion were collected as well as information on dependent variables. The information had been supplied to Project Teen offices by care coordinators (social workers), community health nurses, and school board officials assigned to each case. The data are collected on health variables through prenatal assessment form, post partum assessment form, infant assessment form, the Prenatal Care Plan and Service Record, and Infant Care Plan and Service Record. The Project Teen Activity Monitoring Form for Nursing supplied records on the number of clinic visits, the number of home visits (total number, and number by trimester), number of ineffective visits, immunizations, and number of well baby appointments kept. Based on the individual

Family Support Plan, individual records on each clients' goals, on service linkages, on school and work activity, child care, and selected method of birth control are kept by care coordinators as a result of monthly visits (Appendix A).

Collection of data on the group never participating in Project Teen was through record review beginning with a source list offered by P.B.C.H.U. senior community health nurses in the clinic locations at Northeast and Delray. Records on demographics, birth weight, kept prenatal visits, and post partum visit kept were available through the adolescent mothers charts. Other variables can not be accurately accessed in this manner for this study.

Plan for Data Analysis

The SPSS - Graduate Pack was used to review the data; descriptive statistics and chi-square analysis were done on all demographics. Crosstabs and chi-square verified that all demographics vary independently.

In answer to question one, whether regarding birth weight or prenatal visits, there is difference between program participants and non participants, Group 1 (delivered in the program), Group 2 (delivered before program), and Group 3 (never in the program), were compared by One-Way ANOVA to test for significant difference in mean variation. Post partum visits were evaluated on the three groups by descriptive statistics and chi-square analysis.

For question two, the actual number and rank groupings were recorded for home visits, nursing visits, and total contacts. Using actual numbers of visits, bivariate correlation's were run with variables birth weight, prenatal visits, F.S.P. goals met, and numbers of service linkages. Using rank levels of home visits, nursing visits, and total contacts, ANOVA was run on the same integral variables. One-Way ANOVA on actual visits by level of nominal variable was run on nominal variables because this test is statistically stronger than chi-square.

For question three, One-Way ANOVA was used to analyze birth weight, prenatal visits, F.S.P. goals, and service linkages by care source. Nominal data categories, post partum appointment kept, well baby appointments kept, school activity, career program, child care site consistency, immunizations, and no subsequent pregnancy for 18 months were analyzed by descriptive statistics and chi-square.

All results were discussed with respect to program goals and impact plans referring to the Project Teen Evaluation Model 1994-1995 (Appendix D) and with respect to expectations based on the literature review.

Chapter IV

Results

Characteristics of the Sample

Of the 372 teens in Project Teen 9 were 13 years of age, 27 were 14, 45 were 15 years old, 89 were age 16, 105 were 17, 91 were 18, and 6 were 19 years old. Project Teen participants were 22.3% white, 61,3% black, and 16.4% Hispanic. Of this group, 89.9% were parity 0, 94.4% were single, and 65.9% were from northeast Palm Beach County areas. Concerning care source, 77.4% were P.B.C.H.U. clients, 8.3% used private physician or HMO's, and 13.2% used both. Demographic data on subjects in group 1 (program participants delivering in the program), on group 2 (program participants delivering before joining the program), and group 3 (the subjects never in the program) are presented on Table I. The group 3 control differs in area of residence, with a greater proportion coming from the south Palm Beach County area, and by racial balance, from groups 1 and 2. Crosstabs and chi-square were run to verify that all demographic variables vary independently.

Table I

Demographics on Subject Groups

Demographics	Group 1 Frequency Percent	Group 2 Frequency Percent	Group 3 Frequency Percent	Total Frequency Percent
AGE	176 100%	98 100%	98 100%	372 100%
13	4 2.3%	5 5.1%	0 0%	9 2.4%
14	18 10.3%	7 7.1%	2 2%	27 7.3%

Demographics	Group 1 Frequency Percent	Group 2 Frequency Percent	Group 3 Frequency Percent	Total Frequency Percent
15	23	15	6	45
	13.2%	15.3%	6.1%	12.1%
16	48	25	15	89
	27.6%	25.5%	15.3%	23.9%
17	49	18	38	105
	28.2%	18.4%	38.8%	28.2%
18	32	27	32	91
	18.4%	27.6%	32.7%	24.5%
19	0	1	5	6
	0%	1.0%	5.1%	1.6%
RACE	176	98	98	372
	100%	100%	100%	100%
Black	102	60	66	228
	58%	61.2%	67.3%	61.3%
White	44	29	10	83
	25%	29.6%	10.2%	22.3%
Hispanic	30	9	22	61
	17%	9.2%	22.4%	16.4%
MARITAL STATUS	176	98	98	372
	100%	100%	100%	100%
Married	12	8	1	21
	6.8%	8.2%	1%	5.6%
Single	164	90	97	351
	93.2%	91.8%	99%	94.4%
PARITY	176	98	98	372
	100%	100%	100%	100%
0	166	90	78	334
	94.3%	91.8%	79.6%	89.9%
1	9	8	16	33
	5.1%	8.2%	16.3%	8.9%
2	1	0	4	5
	.6%	0%	4.1%	1.3%
RESIDENT AREA	176	98	98	372
	100%	100%	100%	100%
North	143	75	27	245
	81.3%	76.3%	27.6%	65.9%
South	33	23	71	127
	18.8%	23.7%	72.4%	34.1%
CARE SOURCE	176	98	98	372
	100%	100%	100%	100%
P.B.C.H.U.	130	60	98	288
	73.9%	61.2%	100.0%	77.4%
Private Physician	16	15	0	31
	9.1%	15.3%	0%	8.3%
Both	30	19	0	49
	17.0%	19.4%	0%	13.2%
Not Recorded	0	4	0	4
	0%	4.1%	0%	1.1%

Presentation of Findings

The data collected for this study were processed statistically on SPSS-Graduate Pack 1995.

Research Question 1

The participant group who delivered in the program was labeled group 1 (n=176), the group who delivered before joining the program, group 2 (n=98) The group never in the program, group 3 (n=98). Descriptive statistics indicated the mean birth weights of the three groups to be: participants, Group 1 M = 6.99, SD 1.18, the Group 2 comprised of those delivered before participation, M = 6.80, SD 1.39, Group 3, never in the program, M = 6.90, SD 1.33, and combined Group 2 and 3 controls, M = 6.78, SD 1.34. One way analysis of variance executed with Group 1 and all control groups indicated no significant differences in means between groups.

Since literature reports have suggested a relationship of low age of the mother to birth weight, ANOVA was performed indicating no significant difference between groups by age for mean birth weight for all groups, 1, 2, and 3 at the $p \leq .05$. ($F(6,359) = .29$ $p = .32$). One way ANOVA of birth weight by level of demographics, race, residence area, care source, marital status, and parity showed no significant differences at $p \leq .05$.

Since infant birth weight is a characteristic which may be impacted by many genetic and environmental influences over a long period of time, and since results of prior studies validate this situation by presenting inconclusive or conflicting data, the researcher returned to the program objectives to evaluate the data based on specific Project Teen evaluation criteria. The evaluation model (Appendix D), calls for the

program activity to influence a decrease in number of very low birth weight (3 pounds 8 ounces) infants among participants. Results are in Table II.

Table II

Mean Very Low Birth Weight by Group

Group	n	M	SD	cases	%
Group 1	176	2.84	.5875	3	1.7
Group 2	98	2.63	.445	2	2.0
Group 3	98	2.65	.644	2	2.9
Combined Control (2 & 3)	196	2.64	.4522	4	2.1

When compared to the participants, a greater percentage of very low birth weight babies were born to control groups 2 and 3 than to those participating in Project Teen at time of delivery, a positive program result. However, the number of cases is too small to be analyzed for significance.

The researcher also believed that a decrease in number in low birth weight (3.9 - 5.5 pounds) babies might provide further support for the conjecture that the program participants have behaved in patterns minimizing risk to the fetal weight gain. Results are in Table III.

Table III

Mean Low Birth Weight by Group

Delivered in Group	n	M	SD	Cases	%
Group 1	176	4.83	.435	11	6.2
Group 2	98	4.7	.644	13	13.2
Group 3	98	4.9	.479	6	6.1
Combined Control (2 & 3)	196	4.8	.5883	19	9.7

In this case the combined control groups and the group who delivered before joining the program showed a higher percentage of low birth weight deliveries than did program participants, but the total number is too small to be analyzed for significance. However, the program objectives were met for the participating groups.

Prenatal appointments kept were totaled for each of the groups concerned in this study and descriptive statistics were run. Results are in Table IV.

Table IV

Mean Number of Prenatal Visits Made by Group

Group	M	SD	n
Group 1	2.66	3.72	176
Group 2	.4211	1.57	98
Group 3	6.07	4.17	98
Groups 2 & 3	3.29	4.25	196

The results for group 2 remain questionable since so few teens were cooperative about bringing prior prenatal appointment data to Healthy Mothers/Healthy Babies and Project Teen when they joined the program, and nurses were unable to obtain complete records in many cases. This would cause us to question the reliability of combining groups 2 and 3 for analysis. However, combining groups does show a total control group with a higher average number of kept prenatal appointments kept (M 3.29, SD 4.28) than for group 1 the participants. When ANOVA is run on results for prenatal appointments kept between and among groups 1 and 3 (those never in the program) the indication is that those in group 3 kept significantly more appointments than group 1. ($F(1,372) = 48.2$, $p = \leq .05$).

Additionally, the post-partum appointment usually is recorded as a visit to the same caregiver as prenatal visits. There again appears to be incomplete data for group 2, with only 36 of 98 subjects reporting. 21 of the 36 or 58.3% went to this post-partum appointment. Of those never in the program, control group, 56 of 98 (60.2%) reported attending the post partum appointment. In group one, 134 of 176 (76.1%) reported attending the post partum appointment scheduled. In groups 1, versus 2 and 3 combined, chi-square analysis of post partum appointments kept shows significant difference Pearson = 22.6, $p \leq .05$.

Research Question 2

This concludes the analysis of question 1 data which is accessible for analysis with a control group which can be described as not participating in the Project Teen activity at time of delivery. For this reason the program participants groups 1 and 2 are combined and used for further analysis on pregnancy and family variables (outcomes), with respect to amount of visitation, and group 3 is no longer studied. The question two of the study divided the participant group $n \leq 372$ into three groups (ranks) by number of home visits (0-4, 5-9, 10-more visits), by total contacts (0-21, 22-40, 41 - more contacts), and by the number of nursing visits (0, 1, 2 or more), to determine whether there are relationships between numbers of home visits, the numbers of total contacts, or the number of nursing visits, with the dependent variables, birth weight, prenatal visits kept, post partum visit kept, Family Support Plan goals met, service or resource linkages made, and the nominal categories of well baby appointments kept, subsequent pregnancy within 18 months, appropriate career or career program, school activity, 100% infant immunization compliance, and consistency of child care site. It should be noted at this point that since there are 104 persons in the program who have

not yet delivered infants, but may have data on certain variables, the total cases by level of home visit or total contact may equal variable numbers between 274 and 372.

Pregnancy outcomes were analyzed by ANOVA for home visit rank. There was no significant difference in birth weight by rank of home visits $n = 269$, $p \leq 05$. By rank of home visits there was also no significant difference in number of post partum visits kept $n = 269$, $p \leq .05$. However for prenatal visits kept by rank of home visits there was significant difference ($F(2,357) = 11.47$, $p \leq .05$). Results are in Table V.

Table V

Prenatal Visits Kept by Level of Home Visits

Visits	n	M	SD
0-4	204	1.12	2.27
5-9	93	2.58	4.12
10 and up	65	2.84	3.52

Prenatal visits kept increased as total home visitation increased.

Considering the integral data variables by home visits, actual and rank, the Family Support Plan goals completed were reviewed first via descriptive statistics of subpopulations of 0-4 met, 5-9 met, and 10 or more met. Pearsons product moment correlation was done using actual numbers rather than levels of home visits and actual Family Support Plan goals met ($r = .21$, $p \leq .05$) showing a very weak positive relationship. ANOVA was done on actual home visits by rank of Family Support Plan goals met showing no significant variation in mean for each level.

Service linkages or connections to resources as described by level of home visit rank appears in Table VI.

Table VI

Linkages to Services by Home Visit Rank

Visits	n	M	SD
0-4	199	3.05	4.08
5-9	108	6.04	4.36
10-more	58	9.69	8.05
Total	365	4.99	5.54

Pearson Product Moment correlation was done using actual home visits per adolescent and service linkages, ($r = .47$, $p \leq .05$), indicates a positive relationship between actual linkages and actual visits made. One way ANOVA of actual home visits by level of linkage subgroup indicated a significant difference between groups, ($F(1,362) = 43.04$, $p \leq .05$).

The nominal data variables were next analyzed by descriptive statistics (mean, standard deviation, and cases) and by running ANOVA of actual numbers of home visits by level of each variable to find any significant deviation in mean visits by group.

Considering these data results with respect to number of home visits, the initial well baby appointments were kept by 270 of 274 program participants who had delivered; the mean number of home visits for those who kept the appointment versus those who didn't, wasn't significantly different. Of 274 babies delivered 272 had received 100% of the required immunizations with mean visits for those who complied not significantly different from those who did not. The child care site change mean for home visited groups were 0-4 visits, $M = 1.28$, $SD = 6.38$, for 5-9 visits, $M = 1.23$, $SD = .585$, and for 10 and up visits, $M = 1.30$, $SD = .659$. ANOVA on actual home visits by groups (no moves, 1, or 2 or more) showed no difference in groups. The mean for

adolescents reported with appropriate school activity (1) versus, inappropriate (2), was; 0-4 visits, M = 1.28, SD = .450, 5-9 visits, M = 1.30, SD = .461, 10 - more, M = 1.37, SD = .485. There is a slight increase toward no school activity as the home visits increase, and ANOVA on actual visits by the group (1), in school, and the group (2), not in school, shows no significant difference. For appropriate program, 1 indicating yes and 2 meaning no, means for groups were 0-4 visits, M = 1.56, SD = .500, for 5-9 visits, M = 1.51, SD = .503, and for 10 or more visits, M = 1.48, SD = .503. ANOVA on actual home visits by appropriate program (1) and inappropriate (2) does show a significant difference. Group 1, M = 5.65, SD = 6.34, group 2, M = 4.31, SD = 4.62, ($F(1,366) = 5.44$, $p \leq .05$), indicating an increase in appropriate career program with increase visitation. For subsequent pregnancy there were a total of 16 repeat cases, 2 in the group with 0-4 visits, 7 in the group with 5-9 visits, and 7 in the 10-more group. Of 274 adolescents participating with infants, this number represents a repeat pregnancy total percent of 5.8% well below the program goal of 15%. ANOVA results of visits by level showed no significant difference by group.

For the comparison of outcome variables by total contacts including phone or visits in locations other than home, the One-Way ANOVA was done on pregnancy outcomes. Birth weight by level of total contact showed no significant difference at the $p \leq .05$. However, prenatal visits kept by rank numbers of total visits does show a significant difference ($F(2,357) = 8.31$, $p \leq .05$). Results shown in Table VII.

Table VII

Prenatal Visits Kept by Level of Total Contact

Number of Contacts	M	SD	n
0-21	1.07	2.07	162
22-40	2.42	3.58	88
41 and up	2.42	3.88	107

Fewest prenatal visits were kept by those adolescents making least contact with the program.

Family Support Plan goals met and linkages made analyzed by level of total number of contacts including telephone and visits in all locations was reported by rank. Results shown in Tables VIII and IX.

Table VIII

Family Support Plan Goals Met by Level of Total Contacts

Total Contacts	M	SD	n
0-21	3.43	3.78	115
22-40	4.78	4.40	88
41-more	5.93	4.65	108

Table IX

Linkages Service and Resource by Level of Total Contacts

Total Contacts	M	SD	n
0-21	.353	.89	167
22-40	1.10	1.40	88
41-more	2.24	2.31	110

Bivariate correlation for Family Support Plan goals met was r = .259 ($p \leq .05$). For linkages r = .58 ($p \leq .05$). Family Support Plan goals met increased slightly as contacts increased, a weak positive relationship, while linkages increased substantially, a stronger positive relationship. One Way ANOVA of total contacts by rank by Family Support Plan goals met was significant ($F(2,308) = 9.85$ $p \leq .05$). One Way ANOVA, total contacts by level of number of links was also significant, ($F(2,365) = 75.92$, $p \leq .05$).

Data on well baby appointments kept and immunizations indicate that for total contact rank the pattern is similar to that of home visits. ANOVA for total contacts by well baby appointment kept group versus the non compliant group, and for total contacts by immunization compliance group showed no significant differences.

There were significantly increasing numbers of contacts with the increase in child care changes. ($F(2,269) = 4.688$ $p \leq .05$). Results are shown in Table X.

Table X

Total Contacts by Level of Child Care Site Changes

Child Care Site Changes	M	SD	n
no changes	34.81	25.26	224
1 change	46.36	38.04	22
2 or more changes	49.92	38.74	26

Subsequent pregnancy remained at 2 cases per total visit rank until the 41 and up contact group, which reported 12 subsequent pregnancies, a total of 16 of 274 cases or 5.8% of the total. All results in these areas were impressive when considered in light of program goals. There was no significant difference between groups remaining in school (1) and those not in school (2) as to total contacts received.

However, for the group (1) in appropriate career program versus group (2) not in an appropriate career program, there was a significant difference in number of received contacts ($F(1,366) = 18.56$, $p \leq .05$). The mean number contacts for group (1), $n = 173$ was, $M = 36.25$, $SD = 2.4$, and for group (2) $n = 195$, $M = 23.9$, SD 23.27; the contacts were higher in the group with appropriate program activity.

The number of nursing visits for each client is included in the number of home visits and in the total contacts but is considered separately with respect to each of the variables.

For participants One-Way ANOVA of variable birth weight by level of nursing visits showed no significant difference at the $p \leq .05$. Post partum visits also shows no significant difference by rank nursing visits at the $p \leq .05$. The prenatal visits kept by level of nursing visit, however, shows a significant difference. ($F(2,357) = 19.17$, $p \leq .05$). Results are shown in Table XI.

Table XI

Prenatal Appointment Kept by Level of Nursing Visits

Number of Visits	n	M	SD
0	133	.60	1.54
4	86	1.98	3.21
2 or more	138	2.86	3.86

Prenatal appointments kept increased significantly as the number of nursing visits increased.

The One Way ANOVA for variable Family Support Plan goals met by nursing visit group rank shows significant difference ($F(2,308) = 3.19$, $p \leq .05$) by rank of Family

Support Plan goals. As nurse visits increase, met goals also increases, as shown in Table XII.

Table XII

Family Support Plan Goals met by Level of Nursing Visit Rank

Nursing Visits	M	SD	n
0	3.80	3.66	87
1	4.57	4.58	86
2 and up	5.30	4.63	138
Total	4.68	4.40	311

The one way ANOVA for variable service linkages by nursing visit group rank was also significant ($F(2,362) = 26.29$, $p \leq .05$). The number of resource linkages made by the family increased as nurse visitation increased. Results are shown in Table XIII.

Table XIII

Linkages Made by Nursing Visit Rank

Nursing Visits	M	SD	n
0	.36	.92	138
1	1.20	1.67	88
2 and up	1.78	2.13	139
Total	1.10	1.76	365

There was a bivariate correlation of actual nursing visits to actual links ($r = .37$, $p \leq .05$) showing a somewhat weak but positive relationship. One way ANOVA for actual number of nursing visits by level of (category) well baby appointment kept, school activity, immunization compliance, child care site change, and appropriate career program show no significant differences by category for variables.

Research Question 3

The availability of some data which were comparable by care source, P.B.C.H.U., private physician, or both, has allowed some analysis in search of relationships between care source and the same variables. There was no significant difference by care source in mean weights of infants born when the mothers were under care of any particular source. Of the five very low birth weight babies born by participants, 3 were born to P.B.C.H.U. clients, one to a private care source, and one to a "shared" care mother using P.B.C.H.U. and private care. Of the 24 low birth weight babies, 20 were born to P.B.C.H.U. clients, 2 to private practice, and 2 to adolescents using both. Prenatal visits kept did vary significantly by care source ($F(2,357) = 6.69$, $p \leq .05$). The most prenatal appointments were kept by clients using both sources, followed by P.B.C.H.U. clients. Results are shown in Table XIV.

Table XIV

Prenatal Appointments Kept by Level of Care Source

Referred to	M	SD	n
P.B.C.H.U.	1.77	3.07	247
Doctor	.77	1.98	53
Both	2.92	4.06	60
Total	1.81	3.18	360

The mean Family Support Plan goals met also varied significantly with respect to care source, with the greatest mean completion shown for P.B.C.H.U. clients ($F(2,308) = 4.07$, $p \leq .05$). Results are shown in table XV.

Table XV

Family Support Plan Goals Met by Level of Care Source

Referred to	M	SD	n
P.B.C.H.U.	5.16	4.67	212
Doctor	3.50	3.04	40
Both	3.76	3.87	59
Total	4.68	4.40	311

There was no significant difference in service linkages by care source. Well baby appointments kept, immunization compliance, subsequent pregnancies, appropriate career program and school activity do not show significant relationship by chi-square statistics for the $p \leq .05$.

Chapter V

Implications

Discussion

Is there any difference in pregnancy outcomes, prenatal visits kept, post-partum visits kept and birth weight for a group 1 of pregnant adolescents who deliver while receiving services, versus a group 2 who joined the Project after delivery, and a group 3 who never entered the program in spite of meeting eligibility?

Group 2 had kept fewer prenatal visits, leading one to conjecture that the program is successfully impacting prenatal visits kept. However, group 3, the control group of adolescents who were never in the program, had a significantly greater mean number of prenatal visits kept than group 1. This would refute the reliability of the first conclusion. Combining control groups 2 and 3, there is still a significantly greater number of prenatal appointments kept compared to the number for group 1, the participants.

The author suspects that the pregnant teen is an unreliable source of information concerning her prior medical history leading to inconclusive results. Therefore, the senior public health nurses of Project Teen have inaccurate or incomplete data for group 2. Even with client permission there was an inability to summon the records from prior care sources. For group 3 the researcher collected the data by hand from chart records at P.B.C.H.U., leading to the assumption that the figures are accurate. It is possible, even likely, based on chart review, that some of the

large number of prenatal visits for this control group can be explained as response to presumed problems occurring during the course of the pregnancy. Less informed adolescents with a weaker support system may have relied on the clinic visit more frequently for major and minor problems, health or social. Further research using prospective design might resolve the question as to such reliability. It is possible that for group 3, the 100% P.B.C.H.U. client control, the prenatal care is better coordinated by senior public health nurses than for groups 1 and 2, who have some clients using private care sources all or part of the time.

Prenatal appointments kept does vary significantly by care source, and is highest for the group using a combination of clinic and private physician. Some of those referred to both care sources may have required extensive care for complications.

There was no significant variation in birth weight for group 1 and 2, 1 and 3, or 1 with 2 and 3 combined, at the $p \leq .05$. This situation may not come as a great surprise when it is noted that a number of forces, internal and external, impact the adolescents' health and the well being of the fetus over a long period of development. These may include heredity, nutrition, and lifestyle behaviors. In fact, the literature has pointed out that pregnant adolescents may have several risk factors raising potential for serious complications that mature women do not have, such as preterm delivery leading to low birth weight. The literature also suggests comprehensive care can lower the risk of preterm delivery, PIH, and cesarean delivery. It is uncertain, due to presumed unreliable reporting of prenatal care for group 2, exactly what these adolescents' prenatal regimens were. However, group 3 had a higher number of prenatal visits than did group 1, possibly helping to reduce the risk of low birth weight, and bringing weights close together overall.

Because the program directors stated that as an impact plan they intended to lower the number of very low birth weight (0-3.8 pounds) births in the adolescent participant group 1, these results and those for low birth weight (3 lbs 8 ozs - 5 lbs 5 ozs) are compared for the participants as compared to group 2 and group 3. The impact plan on the evaluation model states an objective of lowering the number of V.L.B.W. births, but does not describe the baseline frequency. It calls for a reduction in number of very low birth weight births, but a reduction compared to what figure we do not know (national average, last year total statistics, last year Project Teen). We can compare the 3 cases of very low birth weight for group 1, $\underline{n}$ = 176, with the combined controls 2 and 3, $\underline{n}$ = 196 which had 4 cases, and states that this is promising evidence of success. However, the numbers are too small to be significant, and further study over a longer period of time or involving more programs would be necessary before conclusions could be drawn.

The performances of group 1, 2, 3, and 2 + 3 on low birth weight (3 lbs 8 ozs to 5 lbs 5 ozs) is supportive of our belief that the program does lower risk for low birth weight. The participating group reported low birth weight on 11 of 176 subjects or 6.2%, while the controls combined for 19 of 196 low birth weight infants or 9.7%. Again, due to the small number of the effected infants, further inquiry in support of the relationship of program to lower risk is warranted. Group 2 had the highest number, 13 (13.2%), while group 3 reported a close percentage to group 1. It is remarkable that the group 3 adolescents did have a significantly higher average prenatal appointment kept total compared to group 2. There was a positive, but very weak correlation for birth weight and prenatal appointments.

Research Question 2

When birth weight was studied with respect to rank of increasing numbers of home visits, total contacts, or senior public health nursing visits, no significant differences were found at the $p \leq .05$. This was also true for post partum visits kept at increasing levels of program activity measured by level (or rank) of home visits, total contacts, or nursing visit. There is significant difference for prenatal visits by increasing level of home visit, total contact, and nursing visits. The conclusion here would be that increasing program activity does increase adolescent attendance at prenatal appointments.

The analysis of the data on home visits and total contacts including home visits indicates that the actual number of service linkages is correlated with the number of home visits and the number of total contacts. This is a positive result in light of the expected outcome. Actual home visits by level of service linkage category shows significant differences between groups. It is reasonable to assume that the increased number of contacts and visits would provide the adolescent with appropriate referral to needed resources and that understanding of a solution to a problem would prompt connection by the client. These results are consistent with those of Bradley and Martin (1994) who found that home visits had a positive effect on adolescent patterns of pregnant low income women in pregnancy related services such as WIC, prenatal care, food stamps, and Medicaid.

It should be noted that creation and completion of fewer or more Family Support Plan goals does not necessarily indicate the level of success in the program, but is an individual decision. Correlation of Family Support Plan goals with home visits and total contacts was weak but positive. Total contacts increased with increasing rank of Family

Support Plan goals met and of service linkage connections made. This is certainly consistent with our expectation that increase in program activity will encourage development of behaviors which will minimize health risk and empower the young adolescent parents to better control their outcomes.

Referring to data categories of well baby appointments, immunizations, child care site changes, school activity, appropriate career program, and "no" subsequent pregnancy for 18 months compared by category of home visit and total contacts, there is little remarkable variation based on the increase in home visits or total contacts. This is due in part to the high total positive participation results. As home visits increased there was a slight trend toward dropping out of school and a similar slight trend toward increased appropriate career program, presumably with increased time in the program. The variance for home visits by appropriate career program was significant. The subsequent pregnancies increase from 2 in the 0-4 home visits to 7 in each of the higher categories for home visits. There may be subsequent pregnancies as time increases after delivery in spite of visitation, or visitation may increase after the subsequent pregnancy is discovered. In all cases the figures seem to validate that the program is meeting its objectives.

As in the case of home visits the high percentage of immunization compliance and attendance of well baby appointment indicate that the program is meeting it's goals. For child care site changes, the activity in total contacts increases as site changes increase, presumably a care coordinator response to change anticipated or already taking place, and group 2 showed a higher number of total contacts with the health care provider at time of change of child care site. It is possible that the first move of child care site is more traumatic for the family and initiates more contact. There is no

significant difference in total contacts according to school activity category. However, there is significant difference in number of total contacts for level (category) of appropriate career program with more contacts for those in appropriate career programs.

For senior public health nursing visits, a subdivision of home visits, the number of nursing visits varies significantly, increasing with increase of rank for Family Support Plan goals met and level of service linkage connections. It is particularly interesting, that the number of nursing visits relates to socioeconomic outcomes and not to exclusively health related outcomes. It is also noteworthy that for birth weight no significant relationship with number of public health nurse visits exists, but for prenatal appointments kept, there is a positive relationship between number of nurse visits and number of kept appointments. It should be noted here when comparing the number of visits, home visits, nurse visits, or total, with prenatal appointments kept, the control non-visited group 3 all P.B.C.H.U. clients had shown the greatest prenatal visit relationship in the study, in spite of the lack of Project Teen services. This may be due to the senior public health nurse intervention at the clinic. Also, the study of birth weight for part one has shown that many factors likely influence birth weight, and the number of program contacts may be only a small influence.

Research Question 3

Considering the variables by care source, some suggestions can be made. For birth weight the means do not differ significantly between groups (group 1 = P.B.C.H.U., group 2 = private doctor, group 3 = both). The group using both sources had the most prenatal visits and the P.B.C.H.U. group had the next highest number of prenatal visits. Persons enrolled in P.B.C.H.U. care may be significantly well directed to

appreciate the importance of the appointment regimen. This may be due in part to efforts of clinic senior public health nurses to educate the young clients. Goals met of the Project Teen Family Support Plan were also highest among P.B.C.H.U. clients and lowest among teens going to private physicians, which may indicate that P.B.C.H.U. caregivers do impact the positive socioeconomic outcomes of their clients.

Overall, there is evidence that the program activity successfully influences the behaviors of young adolescents facilitating utilization of prenatal services and family resources, internal and external. The study results suggest that senior public health nursing is an essential component to the success of the program.

Limitations of the Study

In retrospective program evaluation, the study participant group which constitutes the experimental group of subjects are not selected by the researcher. In fact, they are selected by the process of both self-selection and program operators selection. Therefore randomization is not possible and there is no assurance of equivalence between experimental and control groups (Brink & Wood, 1989). However, both control groups are constructed from persons who have the same process (of adolescent pregnancy) as program participants, indicating that they would likely be very similar to program participants, and leading to the significant increase in internal validity of the study. The control group of adolescents who delivered before program participation did not , ultimately, turn the program down. It is likely, in fact, that they were waiting for admission to the program operating at capacity. There is no information available as to whether the 98 persons in the control group that were never in the program were aware of the program existence or wished to enter the program. The researcher finds no evidence that Project Teen had been offered to these

adolescents in P.B.C.H.U. medical charts. In this study the sheer size of the groups being compared as to birth weight, prenatal appointments, and post-partum appointment kept increases validity.

Data supplied to the Healthy Mothers/Healthy Babies office by school board representatives, by field care coordinators and community health nurses reporting on several existing forms is subject to the thoroughness and accuracy of the Project reporters. The researcher has no control over completeness of the data, limiting its reliability.

This study is limited in generalizability because of a number of factors related to the sample population. The population was taken of adolescents under 19 years of age from a mainly, not exclusively, urban lower socioeconomic population in Palm Beach County, Florida. It does not include all of such individuals in the county area who might have qualified, but remained unidentified. There is no implication that this age group is representative of pregnant adolescents in other settings or of women at more mature ages. The study is also limited as to construct validity, since the retrospective program evaluation can show only weak associations between dependent and independent variables. The researcher believes that further study of more programs over longer periods of time could help to lend further evidence to important areas of content, strategies, and human relationships.

The study is also limited by the number of outcomes which the researcher has chosen as obtainable from the Project Teen design. The time of participation for clients is only until the infant's second birthdate, which limits the timespan of follow-up on designated outcomes. Information on length of stay in the program indicates that in the first half of 94-95 the average length of stay in the program was 12 months, and that

42% actually completed services. The termination's were listed as percentages: 1) 22% moved, 2) 8% voluntary withdraw, 3) 16% lack of participation, 4) 7% no longer eligible.

Caution should be exercised in generalizing results of this collaborative funded project in Palm Beach County to other areas unless a similar multidisciplinary approach is to be planned. Three agencies combined efforts with substantial funding plans to design an activity format integrating public health nurses, care coordinators and clients in an organized visit format to bring about the resultant outcomes.

As in all research, this inquiry is limited by the personal bias and projected meaning of the researcher. Objectivity should be maintained.

Implications for Nursing

Adolescent pregnancy is one of today's leading health and social problems, due in part to less stringent prescriptions regarding adolescent sexuality, availability of legalized abortion, and increased social tolerance for single parenting (Burke, 1991). Nurses have been in the forefront of health care delivery to adolescents, and will continue to bring the holistic patient centered perspective to the development and delivery of programs utilizing the flexible but well organized multidisciplinary approach including home visitation to offer a continuing comprehensive service to the teenage pregnant population in various settings.

Programs including home visitation to increase utilization of routine services such as prenatal services, medical appointments, WIC, and parenting classes have been most successful with groups of low income, unmarried teenagers, but overall, the investigation into such programs has resulted in mixed and inconclusive results. There is strong evidence that programs focused on social support alone will be less likely to change birth outcomes such as birth weight or preterm delivery unless professionals

help adolescents to change behaviors. Nurses bring the holistic perspective to client interactions which could energize this effort to encourage client control over health outcomes. The nurse and adolescent actualize the empowerment process as the nurse facilitates the client's awareness of available options and potential for control over family outcome, and in this visitation experience the adolescent becomes more confident in her ability to manage internal and external resources. The nurse facilitates empowerment as outcome.

Implications for Further Research

While public health nurses have been in the forefront of program planning and delivery of programs for adolescent pregnant populations, studies focusing on the effectiveness of programs offering comprehensive services to teens have been inconclusive. Before it can be concluded that the home visitation strategy for reducing preterm delivery and low birth weight is effective, additional research must be done to determine the extent to which home visitation can improve teens health related behaviors and pregnancy problems, such as infection, or complications related to young age, such as preterm births and P.I.H.

Studies of programs, both prospective and retrospective have been plagued by the weaknesses of program evaluation (Julnes, et al, 1994). The methodological weakness in internal validity due to self selection of the participants and the non equivalent control raises discussions about bias. The potential generalizability (external validity) of the results is a concern particularly when the program under study directs considerable resources into a program. Programs have to be modified according to resources and setting to best fit particular communities. Construct validity comes into

question when the developers of programs do not clearly show how measured variables and outcomes or program elements impact the success of the program.

By carefully formulating research questions according to their importance, and clearly defining them, and by selecting appropriate measures, a great deal can be learned about the importance of programs, including those with visitation. We need to think of new, more creative ways, of accessing adolescent pregnant populations for our samples, and must carefully examine the difficulties of informal consent. By studying more programs in various areas, we will be able to develop a better understanding of what program components and relationships appear valuable across settings. Today more than ever we must utilize interdisciplinary and intradisciplinary cooperation to impact problems of adolescent pregnancy. We can share our ideas, collaborate with other professionals, and evaluate the usefulness of our intervention with pregnant teens.

Appendix A: Family Support Plan

SUPPORT PLAN *(Page 1 of 5)*

Name _____
(last) (first)

ID # _____

Date of Birth *(mm/dd/yy)* ☐☐-☐☐-☐☐

Age _____ (under 2 years of age, define age in months.)

ckground Information

nes: _____

e: _____

date: _____

upport Plan Date: _____

dates: _____

_____

_____

Family Members

Names (and ages of children)	Relationship in fam

FAMILY SUPPORT PLAN TEAM

	Name/Program/Address	Phone #('s)	(
vice			
e			

Y SUPPORT PLAN *(Page 2 of 5)*

Name _____
(last) (first)

ID # _____

Date of Birth *(mm/dd/yy)*

Age _____ (under 2 years of age, define age in months.

r referral for services:

ıre your, or your child's, strengths and
sonality traits which will help gain
new skills?

What are your concerns, priorities an
resources for your child and/or family

y of Health and Medical Status
de Vision, Hearing and Immunizations

N/A

.Y SUPPORT PLAN *(Page 3 of 5)*

Name
(last) (first)

ID #

Date of Birth *(mm/dd/yy)*

Age (under 2 years of age, define age in months.)

ry of Assessment/Evaluation:
Cognitive, Communication, Physical (gross & or), Social or Emotional and Adaptive Skills)

ıental Area	Summary of Present Status (include date of assessment/evaluation)

nental Area	Concern Related to Each Developmental Area

ty results:

Y SUPPORT PLAN *(Page 4 of 5)*

Name
(last) (first)

ID #

Date of Birth
(mm/dd/yy)

Age
(under 2 years of a
define age in mont

ACTIVITY PLAN

e What do you want for yourself? For your child? For your family?
*(*Annual goals/short term objectives)*

tion/Resources	Description of Resources/Services	Evaluation
at needs to happen to ch this outcome? o's responsible? *ency, Funding source)*	In what ways will this happen? *(Method, frequency, intensity, duration, and location)*	Are these outcomes reached? What needs to happen next? *(Criteria)*
		Date:

S

MILY SUPPORT PLAN *(Page 5 of 5)*

Name _____
(last) (first) (MI)

ID # _____

Date of Birth *(mm/dd/yy)* ☐☐-☐☐-☐☐

Age _____ (under 2 years of age, define age in months.)

RENTAL CONSENT: I have participated in the elopment of this plan and agree to the provisions. ve been informed of due process rights.

DATE	PARENT/GUARDIAN SIGNATURE

FAMILY SUPPORT PLAN MEETING ATTENDEES

EETING DATE	SIGNATURE	AGENCY	PHONE #
	63		

Appendix B: Letters of Permission

PROJECT TEEN

CONSENT FOR RELEASE OF INFORMATION

The goal of Project Teen is to help you have a healthy baby and adjust to being a new parent. We will help you obtain the services you need through comprehensive case management, nursing intervention, health services and developmental evaluations of your infant, if needed. Services will be provided by the following agencies, which make up Project Teen:

* Palm Beach County Public Health Unit;
  nursing and health services

* Healthy Mothers/Healthy Babies Coalition;
  case management

* Palm Beach County School District;
  educational services

* Early Intervention Program/St. Mary's Hospital;
  developmental evaluations

I hereby authorize Project Teen and the agencies cited above to exchange written and/or verbal information regarding my case until my case is closed. I understand that this consent is subject to me withdrawing my consent at any time. Consent cannot be withdrawn after the information has been obtained or exchanged from other agencies cited above.

Project Teen will protect all students confidentiality and give assurance that students rights will be protected, pursuant to state laws and the Palm Beach County School District procedures.

_____ _____

Client Signature Date

_____ _____

Witness Date

I do not want to participate in Project Teen:

_____ _____

Client Signature Date

Project Teen is a collaborative project between the following agencies: Palm Beach County Public Health Unit, Healthy Mothers/Healthy Babies Coalition, Palm Beach County School District and St. Mary's Hospital.

C:\QA\FORMS\CONSENTa 11/8/94

Agency Permission Form

The Healthy Mothers/Healthy Babies Coalition of Palm Beach County, State of Florida,

hereby grants Barbara J. Adam, a graduate student currently enrolled in a nursing graduate program leading to the degree of MSN at the School of Nursing, Florida Atlantic University, the privilege of access to its facilities and records in order to study the following: The effectiveness of a multidisciplinary program of home visits on pregnancy outcomes in an adolescent pregnant population.

Please see accompaning research proposal.

The agency (does) (does not) wish to be identified in the final report. Request review of final report before release OR

The Agency (does) (does not) wish an abstract of the final report.

12/15/95
Date

Cathy Cahn - Executive Director
Approprite Agency Personel

Barbara J Adam
Student

Lynne M. Hetzler
Faculty Member

Agency Permission Form

HRS, The Department of Health and Rehabilitative Services of Palm Beach Couty, State of Florida,

hereby grants Barbara J. Adam, a graduate student currently enrolled in a nursing graduate program leading to the degree of MSN at the School of Nursing, Florida Atlantic University, the privilege of access to its facilities and records in order to study the following: The effectiveness of a multidisciplinary program of home visits on pregnancy outcomes in an adolescent pregnant population.

Please see accompaning research proposal.

The agency (does) (does not) wish to be identified in the final report.

The Agency (does) (does not) wish an abstract of the final report.

1/3/96
Date

Jean Mahaffey ARNP, MPH
Approprite Agency Personel

Barbara J Adam
Student

Lynne M. Hefter
Faculty Member

Appendix C: Program Summary

PROGRAM FORM B — PROGRAM SUMMARY

We recommend that you complete this form after you have completed the rest of the proposal. Please summarize your answers to the RFP questions appearing on pages 6 and 7 of this transmittal. Please do not exceed the one page (one side) provided.

Agency Name: HEALTHY MOTHERS/HEALTHY BABIES COALITION OF PBC., INC.

Program Name: PROJECT TEEN

Project Teen will serve 360 pregnant and parenting adolescents and 180 infants who live in coastal Palm Beach County, including the west central region. Teenage pregnancy has significant health and social consequences; teens are less likely to seek prenatal care and to finish their education which contributes to the cycle of poverty and dependence. Project Teen is designed to address the consquences of adolescent pregancy by offering a continuuim of comphrensive services provided by five agencies who work in collaboration.

Healthy Mothers/Healthy Babies will provide case management and monthly home visits or telephone contacts according to the teens written care plan, until their child is 2 years of age. Extensive education is provided during the prenatal period, and after the teen gives birth, the care coordinator emphasizes parenting skills, developmental milestones, family planning and stress management to reduce the potential for abuse and neglect.

HRS/Palm Beach County Public Health Unit nurse case managers will conduct nursing assessments and ensure compliance with appointments for prenatal and postpartum care, family planning, well baby care and immunizations.

St. Mary's Hospital/Early Identification Program will provide multi-disciplinary developmental screenings to infants at 4 months of age and again at 18-24 months. If the screening team detects any delays or problems, the child will be evaluated for Part H services.

The ARC will provide the tracking/evaluation component and will provide comprehensive data on the status of each teen and her infant to all members of the service delivery team.

The School Board of Palm Beach County will contribute in-kind support for two staff who supply daily school attendance and other pertinent school information.

The goals of Project Teen include: Increase the number of teens who remain in, re-enter and graduate from school; increase the number of teens who attend prenatal, family planning, immunization and well baby appointments; decrease the number of teens who have a subsequent pregnancy within 24 months, and decrease the incidence of child abuse and neglect through prevention and early intervention.

The cost per client is $1,688 for the aforementioned comprehensive services and is delineated below by agency:

Healthy Mothers/Healthy Babies	$ 578,349	**
PBC Public Health Unit	$ 222,589	
St. Mary's/Early Intervention Program	$ 57,052	

Appendix D: Program Model

LDREN'S SERVICES COUNCIL OF PALM BEACH COUNTY

ncy Name: Healthy Mothers/Healthy Babies Coalition of PBC
ogram Name: Project Teen
ntract #: 042

Goal: To provide a continuum of (medical, social, and educ tional services) for pregn and parenting teens and th babies.

1994-1995 EVALUATION MODEL

Program

Program Process	Program Outcome	Program Impact
. The program will serve 300 eens and their 166 infants until the infant is 18 to 24 onths old). Each client will ave a written Family Support lan (FSP) developed defining renatal and/or postnatal oals and objectives. Clients ill receive health education n prenatal and postnatal opics.	1. Goals developed on the FSP will be met.	1. At least 85% of the program participants who can be located will not have an unplanned subsequent pregnancy during the 18 months following delivery. 2. Decrease the number of very low birthweight (3 lbs., 8 oz.) infants among participants. 3. Increase the number of teens who graduate from school, compl a GED program (or other alterna program), and/or obtain employm
. Each pregnant teenager ill receive an initial ssessment by the nurse nd care coordinator and follow-up telephone contacts, ome visits, or field visits ccording to the FSP developed minimum of a monthly contact y either the nurse or care coordinator). Clinic and medical appointments will be monitored by the nurse.	2a. Increase the number of adolescents who enter prenatal care in the first trimester of their pregnancy. 2b. Adolescents who have not traditionally accessed prenatal care will keep 50% or more of their prenatal appointments.	
3. Each teen will receive a post-partum assessment by the nurse and care coordinator and follow-up telephone contact, home visit, or field visit according to the FSP developed (minimum of a monthly contact by the nurse or care coordinator). Clinic and medical appointments will be monitored by the nurse.	3a. Families who have not traditionally maintained well baby/ child appointments will keep 50% or more of well baby and well child medical appointments, including hearing, vision, and developmental screenings. 3b. Children ages 0 to 24 months will receive 100% of all indicated childhood immunizations.	

LDREN'S SERVICES COUNCIL OF PALM BEACH COUNTY

ency Name: Healthy Mothers/Healthy Babies Coalition of PBC
ogram Name: Project Teen
ntract #: 042

Program

Program Process	Program Outcome	Program Impact
a. Clients will be referred or needed health and social ervices, including child buse and neglect services. b. Babies identified as eeding the services of EIP ill be referred. 5. School attendance of the eens will be monitored on a daily basis by the care coordinator and School Board Special Programs. 6. All children will receive assistance in obtaining child care as determined in the FSP.	4. Families and/or adolescent parents will receive all indicated services based upon the individual needs of the family. These services include: medical, social, and legal services, including but not limited to Medicaid, Medicare, WIC, AFDC, Food Stamps, Social Security Income, and Social Security Disability. 5. Improve school attendance and increase the enrollment of pregnant and parenting teenagers in school and alternative education programs; e.g., GED, training/work programs. 6. Children will receive child care arrangements.	

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