

The Effect of School-Based Health Clinics on Teenage Pregnancy and Parenting Outcomes: An Integrated Literature Review

Julie A. Strunk, RN, BSN

ABSTRACT: Teenage pregnancy outcomes have become an increasing concern in the United States. Education and support of pregnant teens are critical factors that may determine good or poor pregnancy outcomes. Poor outcomes may include low birth weight, developmental delays, and poor academic performance. Although the number of teenagers experiencing pregnancy and parenting has declined in the U.S., school-based health clinics can be used to provide support and guidance designed to avoid the negative outcomes associated with teenage pregnancy and parenting. By having school-based health clinics, nurse practitioners and school nurses can provide much needed services to pregnant and parenting teens. These services should include educational support, counseling, and community resources. This inquiry provides a metasynthesis of the literature and will review, examine, and summarize the literature relating to the effect of school-based clinics on teenage pregnancy and parenting outcomes.

KEY WORDS: developmental delays, low birth weight, poor educational outcomes, school-based health clinics, school nursing, teenage pregnancy outcomes

INTRODUCTION

Teenage pregnancy outcomes are a well-documented problem in the United States (Hoyt & Broom, 2002). The outcomes associated with mothers and their infants may include low birth weight, developmental delays, and poor academic performance, which can be reduced through the intervention of school-based health clinics. Because teenagers are not well-equipped for the realities of parenthood, they often have little or no knowledge about child development and parenting, and they often romanticize the idea of having a baby. To become effective parents, pregnant and parenting teens need to be taught child care skills and receive support in their efforts to implement these skills. Changes in society, provision of health care, education, and family characteristics have amplified the need and demand for school health ser-

vices (Stiles, 2005). Although teenage pregnancy numbers have declined, those experiencing pregnancy and parenting can benefit from school-based health clinics, which can be used to provide support and guidance in avoiding the many negative outcomes that teenage pregnancy affords.

STATEMENT OF THE PROBLEM

According to the National Campaign to Prevent Teen Pregnancy (2007), the teenage birth rate decreased by 33.5% between 1991 and 2004. While the number of teenage pregnancies has declined in recent years, there is still a great need for support of parenting skills. Reviews of successful teenage parenting and pregnancy programs have indicated that three components appear to have a long-term impact on the life outcomes of the mother and the baby: (a) prenatal care, (b) continuing educational support with child care, and (c) postpartum family planning (Williams & Sadler, 2001).

The initial component focuses on helping teenagers

Julie A. Strunk, RN, BSN, is a graduate student at James Madison University pursuing a Master's in Nurse Education, Harriensburg, VA.

receive appropriate prenatal care during their pregnancy. In general, teenagers who receive good prenatal care have healthier babies who sustain fewer problems in later life (Barnet, Duggan, & Devoe, 2003). Once the teenager delivers and begins parenting, providing educational support with child care appears to have the greatest long-term impact (Barnet, Arroyo, Devoe, & Duggan, 2004). Teenagers who have readily available child care are more likely to stay in school, which in turn improves their economic future (Barnet et al., 2004). The third component, access to and guidance in family planning, affects long-term life outcomes (Amin & Sato, 2004). Teenagers who give birth are at a greater risk of having a repeat pregnancy within 2 years, suggesting that many of these young mothers do not use contraception. It is interesting to note that teenagers who choose to keep their babies are more likely not to use contraception regularly. The reason for these findings is not clear, but it is reasonable to assume that providing family planning counseling may reduce the likelihood of a repeat pregnancy.

Teenage parenthood greatly increases the likelihood of negative life outcomes for both the teenager and the baby. The reason for these negative outcomes may be linked to poverty as well as education.

BACKGROUND

Teenage parenthood greatly increases the likelihood of negative life outcomes for both the teenager and the baby. The reason for these negative outcomes may be linked to poverty as well as education. Parenting as a teen is one of the most common causes for dropping out of school among teenage girls. Once the young girl makes the decision to drop out of school, she is much more likely to require public assistance and to have an income below the poverty line (Barnet et al., 2004).

It has been documented that babies born to teen mothers have an elevated risk of development delays, behavior problems, health complications, and academic problems (Gueorguieva et al., 2001). In particular, low birth weight is one of the first negative consequences observed with greater frequency in babies born to teenagers (Barnet et al., 2003). Risk factors, such as socioeconomic status, level of prenatal care, quality of prenatal diet, and level of stress, all play a dynamic part in the likelihood of having a low-birth-weight baby. Prenatal diet is of particular concern because teenagers normally have inadequate diets before pregnancy, and many have very little understanding of the importance of the prenatal diet (Barnet et al., 2003). Infants with low birth weights tend to have much higher mortality rates, often experience developmental disabilities, and more frequently require

special education services later on (Gueorguieva et al., 2001). Teen mothers are often unprepared to provide a stimulating environment needed for at-risk babies, and a lack of parenting skills may result in feelings of inadequacy and frustration (Williams & Sadler, 2001). This lack of knowledge and frustration could also lead to abuse and/or developmental delays.

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Children born and raised by adolescent parents run the risk of being raised in poverty. The likelihood of an impoverished lifestyle is directly related to the teenage parent's decision to finish school or drop out. The main predictor of a baby's life outcome is the mother's level of education. If the mother does not complete high school, the chances of being raised in poverty are dramatically increased, and the related risk factors associated with poverty increase (Barnet et al., 2004).

PROBLEM FORMULATION

Because there are multiple problems faced by pregnant and parenting teenagers, researchers have attempted to show that the establishment of comprehensive school-based programs can provide teens with multiple services to prevent various adverse consequences of teen pregnancy and to postpone or prevent repeat pregnancies. The purpose of this integrated literature review is to synthesize the literature focusing on the importance of school-based clinics and their effects on teenage pregnancy and parenting outcomes. Development of interventions that will reduce the negative outcomes can then be planned and grounded upon the best scientific evidence. For the purpose of this review, school-based clinics are defined as programs that provide education, in-school reproductive health and family planning services, skill training, financial assistance, and social services to pregnant and parenting teens (Amin & Sato, 2004). Pregnancy outcomes are defined as (a) birth weight, (b) developmental status, and (c) academic status of the teen mother and her child.

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METHOD OF REVIEW

The guidelines for conducting an integrative review use the same standards of clarity, rigor, and replication as an experimental research design. Cooper identified five stages of a research synthesis: (a) problem formulation, (b) data collection, (c) data evaluation, (d) analysis and interpretation, and (e) presentation of results. Cooper's stages of research analysis will be used as a framework to summarize past research and to identify overall thematic conclusions from the investigations that addressed the effect of school-based clinics on teenage pregnancy and parenting outcomes.

DATA COLLECTION

Inclusion Criteria

A literature review was conducted using Cumulative Index of Nursing and Allied Health Literature, MedLine, and PubMed (U.S. National Institutes of Health, Bethesda, MD) to identify studies relating to the effects of school-based clinics on teenage pregnancy outcomes between 1997 and 2006. The keywords "teenage pregnancy," "teenage pregnancy outcomes," "school nurse," and "school-based health clinic" guided the retrieval of current research studies. These searches yielded 48 articles published in peer-reviewed journals.

Exclusion Criteria

Exclusion criteria consisted of articles representing discussions or opinions that did not present original research. Reports that were not included in the data analysis group consisted of studies relating to sexually transmitted diseases (specifically HIV/AIDs) and non-school clinic settings (such as health departments, doctors' offices, hospital clinics). Also excluded were reports based on family life education, peer education, and the totality of health provisions (those services not pertaining to pregnancy) of the school-based clinic.

Data Evaluation

Forty-eight research reports and articles were identified, read, and reviewed. Articles were deleted according to inclusion and exclusion criteria, resulting in 13 studies that met the criteria. Five studies used qualitative methodology, one study was a literature review, and seven studies used quantitative methods. The 13 reports used for analysis included studies from the United States, Finland, and Australia. Studies from the United States represented all regions of the country. Each report studied women aged 13–18 years. One study examined the effect of maternal age and risk for educational disabilities in kindergarten students. The literature synthesis provided a consistent and adequate representation of Caucasian and African American women; however, the number of Hispanic women included in the studies could not be determined.

Study Evaluation

Cooper described evaluation of synthesis studies as judging the adequacy of each individual study by examining the validity of the study's methods (Lefler & Bondy, 2004; Cooper, 1998). With regard to positive pregnancy outcomes, seven descriptive retrospective cohort studies identified reasons for having school-based clinics in the high school setting. Five qualitative methodologies were used in providing depth and insight into the psychosocial factors involved in pregnancy outcomes. Each of the reviewed studies was evaluated as being valid in reporting school-based clinic usage and positive pregnancy outcomes. The strength of evidence was emphasized by the constancy in reports about justification for school-based clinics based on positive teenage pregnancy outcomes. Additional omissions of articles by limiting study types, methodologies, or sample characteristics may possibly make the conclusions unreliable.

After further analysis of the 13 research articles, significant factors for outcomes in each investigation were categorized as pregnancy history, sociodemographic factors, and educational success. A summary of each study is given in Table 1. Study location, sample size, investigation type, and purpose and study outcomes that were related to the effects of school-based clinics on teenage pregnancy outcomes are also reported.

RESULTS

The purpose of this inquiry was to summarize, in general, the explanations given in this collection of previous research on the effects of school-based clinics on teenage pregnancy/parenting outcomes. Most of the studies included in this review reported that the use of school-based clinics had positive effects on the pregnancy outcomes of teenagers. Five studies suggested that school-based clinics had a positive effect on the educational success of pregnant and parenting teens. Absenteeism and dropout rates were reduced for pregnant adolescents and parenting adolescents receiving care at school-based health centers (Barnet et al., 2004; Lowe et al., 2001; Perrin & Dorman, 2003; Casserly, Carpenter, & Halcon, 2001; Spear, 2002).

Strong evidence suggested that many of the problems associated with adolescent pregnancy and parenting could be diminished by school-based programs that offer counseling, health care, health teaching, and education about childhood development.

Two studies suggested that school-based health centers had an initial impact on lessening developmental

Table 1. Summary of the Effects of School-Based Clinics on Teen Pregnancy/Parenting Outcomes

Study	Sample	Factors Examined in Study				Purpose	Outcomes
		Type	Preg-nancy History	Sociodemo-graphic	Educa-tional Success		
Williams & Sadler (2001) Connecticut	<i>n</i> = 52 Female <i>M</i> age = 17 years	Descriptive Nonexperimental Retrospective Cohort study Record review	X	X	X	To examine the effects of an urban high school-based child care center on parenting teens and their children enrolled during 1995–1998.	Students showed improvement in overall grade point averages; 100% were promoted to the next grade; none of the students had a repeat pregnancy; 90% of children were up-to-date on pediatric health visits and immunizations.
Amin & Sato (2004) Maryland	Sample 1 <i>n</i> = 371 Female <i>M</i> age = 16.5 years Sample 2 <i>n</i> = 506 Female <i>M</i> age = 17.7 years	Descriptive Randomized Nonexperimental Retrospective Cohort study Use of questionnaire	X	X	X	To assess the impact of comprehensive school-based health care, educational, family planning, and other social services program for pregnant or parenting teens on their current contraceptive use, future intention to use contraceptives, and desire for more children.	Improved parenting skills, broadened horizons, and elevated self-esteem for enrollees compared to those from comparison schools. Increased contraceptive use and stayed in school and postponed repeat pregnancies.
Barnet et al. (2004) Maryland	<i>n</i> = 431 African American, low-income adolescents <i>M</i> age = not known	Retrospective Cohort study	X	X	X	To examine the association of school-based prenatal services on school attendance and dropout rates.	Absenteeism and dropout rates were reduced for pregnant adolescents receiving prenatal care at a school-based health center in an urban alternative school.
Gueorguieva et al. (2001) Florida	<i>n</i> = 339,171 Male and female kindergarten students <i>M</i> age = 5 years	Descriptive Retrospective Cohort study	X	X	X	To examine the educational outcomes of children born to teenage mothers.	Children of teenage mothers are at higher risk for disabilities in kindergarten.
Key et al. (2001) South Carolina	<i>n</i> = 305 Female <i>M</i> age = 15.8 years	Retrospective Case-controlled Cohort study	X	X	X	To evaluate the effectiveness of prenatal/postnatal intervention group (Second Chance Club) in reducing the number of repeat adolescent births among the participants.	The program demonstrated a significant decrease in the repeat birth rate among participating teen mothers.
Raatikainen et al. (2005) Finland	<i>n</i> = 26,967 Female <i>M</i> age = unknown	Retrospective Cohort study Record review	X	X		To assess the relationship between young age of the mother and pregnancy risk factors and adverse pregnancy outcomes in conditions of high-quality maternity care used by almost the entire pregnant population.	Increased risks for adverse pregnancy outcomes in teenage pregnancies can probably be overcome by high-quality maternity care with complete health insurance coverage.

Table 1. Continued

Study	Sample	Factors Examined in Study				Purpose	Outcomes
		Type	Preg-nancy History	Sociodemo-graphic	Educa-tional Success		
Meadows, Sadler, & Reit-meyer (2000) Connecticut	Study 1 <i>n</i> = 47 Female <i>M</i> age = 16.1 years Study 2 <i>n</i> = 60 Female <i>M</i> age = 15.9 years	Retrospective Record re-view consist-ing of two Connecticut samples	X	X	X	To examine infant birth weights and high school com-pletion rates for two cohorts of ad-olescent mothers attending an ur-ban school-based program (the Polly T. McCabe Cen-ter).	Findings suggest that the school-based program helped to prevent lower-birth-weight in-fants born to ad-olescent mothers and also helped to promote the young mothers to succeed in school.
Barnet, Duggan, & Devoe (2004) Mary-land	<i>n</i> = 390 Female <i>M</i> age = 15.9 years	Retrospective Cohort study using medical records and birth certifi-cates	X	X	X	To examine and compare access to care, comprehen-siveness of care, and birth out-comes for teenag-ers receiving pre-natal care in com-prehensive adoles-cent pregnancy programs in two different settings: school-based vs. hospital-based.	School-based prena-tal care was associ-ated with signifi-cantly lower odds of low birth weight compared with hospital-based care.
Casserly, Car-penter, & Hal-con (2001) Minnesota	<i>n</i> = 1,227 Female <i>M</i> age = not known	Panel Study where cross-sectional data were collected from the same participants at two different points in time.		X	X	1. School attendance will decline for ad-olescent female parents 1 year af-ter a birth com-pared with school attendance 1 year before conception. 2. The number of school transfers for adolescent female parents will be in-versely correlated with school atten-dance both 1 year before conception and 1 year after a birth. 3. Academic achieve-ment will decline 1 year after a birth compared with ac-ademic achieve-ment for the school year before.	There was a marked decline in the av-erage number of days attended; as the number of transfers increased, the number of days present de-creased; the hy-pothesis that aca-demic achieve-ment would de-cline 1 year after birth when com-pared with aca-demic achieve-ment for the school year before conception was not supported; successful academ-ic performance was associated with lower num-bers of enroll-ments or transfers.
Barnes et al. (2004) Austra-lia	<i>n</i> = 10 Female Youth health Nurses	Study consisted of three phases and used an exploratory, descriptive de-sign involving multiple case study and fo-cus-group dis-cussions.	X	X	X	This study was part of a larger project considering the impact of changes in the health sys-tem and services on the roles and responsibilities of school nurses and to identify profes-sional develop-ment needs.	School nurses pro-vide support, refer-al, health promo-tion, and market-ing.

Table 1. Continued

Study	Sample	Factors Examined in Study				Purpose	Outcomes
		Type	Preg-nancy History	Sociodemo-graphic	Educa-tional Success		
Parrin & Dor-man (2003) Florida	<i>n</i> = 22 Female <i>M</i> age = not known	Qualitative	X	X	X	To explore the personal life stories of women who became mothers while still in their teen years.	The findings did not refute or support other studies on teen pregnancy but offered deeper insight into resiliency in the lives of the 22 women.
Stiles (2005) Southern State	<i>n</i> = 5 Female <i>M</i> age = 18 years	Qualitative Ethnographic	X	X	X	To identify and organize the perceived needs, goals, and strategies of teen mothers.	Teen mothers identified their needs as support and knowledge. Goals were happiness, independence, and career; strategies were a support group, life skills education, formal education, and a job.
Spear (2002) Southeastern Region US	<i>n</i> = included entire student body, faculty, and school nurse of the alternative school program (an exact number was not given). Male/female <i>M</i> age = unknown	Qualitative Ethnographic	X	X	X	To examine an alternative school program designed for pregnant and parenting teens; to identify and describe themes characteristic of the social and learning environment of the school; and to discuss any needs for change in the alternative school program and recommendations for further study.	Students were able to experience academic success, provide safe and appropriate care for their newborn infants, and develop positive relationships with peers and teachers as they continued their education in a nurturing, supportive learning environment.
Lowe et al. (2001) Massa-chusetts	Group 1 <i>n</i> = 44 Female <i>M</i> age = unknown Group 2 <i>n</i> = 41 Female <i>M</i> age = unknown	Qualitative	X	X	X	Keeping the girls in the regular high school program; have girls return to school 6 weeks after delivery; increase the number of students enrolled in the school-based health center, having healthy mothers and babies.	The authors learned from the girls to focus on the logistics of attendance; piloted an intake form that was too cumbersome and simplified it to less than 10 data elements; learned that ongoing communication can identify barriers to improvement, such as prenatal visits during school hours; and learned that the cooperative work of the case managers was critical to the operation of the case management program.

delays in children born to teenagers by encouraging the teenage mothers to access early intervention by placing their children in preschool programs and by educating the mothers about childhood development. Strong evidence suggested that many of the problems associated with adolescent pregnancy and parenting could be diminished by school-based programs that offer counseling, health care, health teaching, and education about childhood development (Williams & Sadler, 2001; Gueorguieva et al., 2000).

Two research studies reported that school-based clinics supported pregnant and parenting teens by encouraging ongoing participation in school, providing support and education, and assisting in improving the health of the teen and infant (Stiles, 2005; Barnes, Courtney, Pratt, & Walsh, 2004). Three studies supported the school-based clinic as a means of lowering the incidence of low-birth-weight babies born to teenagers. School-based prenatal care can significantly lower the odds of having a low-birth-weight baby due to counseling, regular check-ups, and provision of nutritional education (Barnet et al., 2003; Meadows, Sadler, & Reitmeyer, 2000; Raatikainen, Heiskanen, Verkasalo, & Heinonen, 2005).

Two studies suggested that school-based clinics had a positive impact on pregnant teens on their decision to use contraceptives and their desire to not repeat pregnancy until they are ready for parenting. Risk-taking behaviors, such as sexual activity, can be addressed in the comprehensive care provided by the school-based clinic (Key, Barbosa, & Owens, 2001). Amin and Sato (2004) suggested that when school-based clinics offered health information, contraception, and family planning counseling, teenagers were more likely to limit family size.

It is clear that school-based health clinics provide much needed education and support to pregnant and parenting teenagers. These clinics play an important role in helping adolescents in their understanding of sexuality and in making responsible choices that can affect their future.

Limitations

All of the research studies included in this review had methodologic problems that must be considered when making any general conclusions about the effectiveness of school-based clinics on teenage pregnancy/parenting outcomes. It is difficult to generalize due to various interventions, methodologic differences, and study limitations. Several programs were based on alternative education programs and did not in-

clude the traditional school program (Meadows et al., 2000; Key et al., 2001; Amin & Sato, 2004; Williams & Sadler, 2001). A number of studies had a small sample size (Meadows et al.; Stiles, 2005; Barnes et al., 2004; Perrin & Dorman, 2003). Selection bias was also noted as a limitation in one study where only healthy pregnant teenagers were chosen to participate (Barnet et al., 2003; Amin & Sato, 2004; Meadows et al.). Limitations of this synthesis include the omission of unpublished reports and investigations in progress.

The nurses can also assist pregnant and parenting teens to accept the responsibilities of parenthood by providing educational programs and resources for financial and legal assistance.

IMPLICATIONS FOR SCHOOL NURSING PRACTICE

It is clear that school-based health clinics provide much needed education and support to pregnant and parenting teenagers. These clinics play an important role in helping adolescents in their understanding of sexuality and in making responsible choices that can affect their future. As trusted confidants, school nurses working in the school setting can provide care during a teenager's early pregnancy and offer guidance for decision making, medical care, and community resources. By collaborating with the student, family, school staff, and health care providers, a plan for care and academic success can be achieved (National Association of School Nurses [NASN], 2005). School-based clinics and nurses should provide support and education to the child-bearing adolescent as her pregnancy progresses and recommend the necessary modifications for her safety and well-being in the school setting. The nurses can also assist pregnant and parenting teens to accept the responsibilities of parenthood by providing educational programs and resources for financial and legal assistance (NASN). School-based clinics are a beginning place to break the intergenerational cycle of adolescent parenthood, and they can help adolescents plan for their long-term future.

CONCLUSION

This integrative review summarized data from 13 investigations to show the effectiveness of school-based clinics on teenage pregnancy and parenting outcomes. Data from 1997 to 2006 will bring the reader up-to-date on the state of knowledge in this area. Our findings showed that by having school-based health clinics, nurse practitioners and school nurses can provide much needed services to pregnant and parenting teens.

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