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Teen Pregnancy Prevention Programs: a Systematic Review of Effects On Pregnancy Rates

Lorry E. Staufer
Regis University

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TEEN PREGNANCY PREVENTION PROGRAMS:
A SYSTEMATIC REVIEW OF EFFECTS ON PREGNANCY RATES

by

Lorry E. Staufer

A Master's Thesis Presented in Partial Fulfillment
Of the Requirements for the Degree
Master of Science, Health Service Administration

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FINAL APPROVAL OF MASTER'S PROJECT

HSA696 MASTER'S THESIS

I have **READ AND ACCEPTED**

the Master's Thesis by:

Lorry E. Stauffer

Teen Pregnancy Prevention Programs:

A Systematic Review of Effects on Pregnancy Rates

Submitted in partial fulfillment of
requirements for the
Master of Science in Health Services Administration
degree at
Regis University

Primary Research Advisor: Maureen McGuire PhD

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Abstract

Teen pregnancy is responsible for numerous negative outcomes for adolescent mothers, their offspring, and society. Myriad programs exist to address this problem; however, many programs administered do not monitor pregnancy rates. A systematic review was performed to assess programs that use pregnancy rates as an outcome measure. For primary prevention programs, components that address life skills and provide contraception information were found to be the most effective. For secondary prevention programs, successful programs provided immediate access to contraceptives.

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Chapter 1: Introduction

The National Campaign to Prevent Teen Pregnancy states that despite declining rates in the last 30 years, teen pregnancy affects almost one in three women before age 20 and “At this level, the United States has the highest rate of teen pregnancy in the fully industrialized world” (National Campaign to Prevent Teen Pregnancy, 2006). Concern over teen pregnancy is important because of the numerous detrimental effects of teen pregnancy on teenage women and their children and on society. “Teen mothers are less likely to complete school and more likely to be single parents,” and “adolescent mothers tend to be at greater risk for obesity and hypertension than women who were not teenagers when they had their first child” (National Campaign to Prevent Teen Pregnancy, 2006.) Potential poor outcomes for the child expand beyond infancy and include lower cognitive scores, lower educational aspirations, higher rates of criminality, welfare dependency as an adult, higher rates of violent crime, and perhaps most alarming, greater likelihood of becoming a teen parent (Young, Turner, Denny, & Young, 2004, p.362.) A study published in the Journal of Marriage & Family found that “Boys born to mothers who began childbearing before age 19 had elevated risks of drug use, gang membership, unemployment, and early parenthood. Girls born to young mothers only had elevated risks of early parenthood” (Pogarsky, Thornberry, & Lizotte, 2006.) Teenage pregnancy hurts society because “Each year the federal government alone spends about \$7 billion to help families that began with a teenage birth” and “too many children - tomorrow's workers - are born into families that are not prepared to help them succeed”(National Campaign to Prevent Teen Pregnancy, 2006).

Statement of the Problem

The problem with current teen pregnancy prevention programs is that they vary significantly in practices and effectiveness. The CDC provides information on nineteen programs to prevent teen pregnancy, HIV, and sexually transmitted infections (Centers for Disease Control and Prevention [CDC], 2003). Other programs include “Baby think it over,” (Underwood & Tatum, 1999) abstinence only programs such as the “Students of Service Program for Sexual Abstinence” in Louisiana (Yoo, Johnson, Rice, & Manual, 2004). Other programs that are culturally or racially specific include “Escuelitas” (Mendez-Negrete, Saldana, & Vega, 2006), and “Plain Talk” (Melby, 2006). Programs have also been developed that target males specifically including California’s program, “Let’s Hear It for the Guys” (Brindis, Barenbaum, Sanchez-Flores, McCarter, & Chand, 2005). The variety of programs may result from different needs of dissimilar target groups and diverse positions of best approaches due to variations in philosophical and religious beliefs. Administrators have numerous programs to select from and may have to satisfy a variety of conflicting interests.

Purpose of the Study

The purpose of this study is to assess the teen pregnancy programs provided in the United States and worldwide to determine if evidence warrants best practice proposals.

Research Question

The research addresses the questions of a) is sufficient data available to propose best practices for teen pregnancy prevention programs, and if so, b) which programs will best help us meet goals of preventing teen pregnancy?

Significance of Study

The National Campaign to Prevent Teen Pregnancy has established a goal of reducing the teen pregnancy rate by one-third between 2006 and 2016. The campaign's focus is on girls aged 15 -19 (Pogarsky et al., 2006). Data from their site reports that “after reaching 117 pregnancies per 1,000 females aged 15-19 in 1990, the pregnancy rate has decreased to 75 pregnancies per 1,000 females aged 15-19 in 2000”[Pregnancy data include births, abortions, and miscarriages](National Campaign to Prevent Teen Pregnancy, n.d.). According to the CDC the United States has established a goal of 43 pregnancies per 1000 women aged 15 to 17 in 2010 (Centers for Disease Control and Prevention [CDC], n.d.).

A systematic review of literature available on existing teen pregnancy prevention programs will provide administrators with information to make informed, practical decisions on which programs to implement. Organized data should minimize conflicting opinions on best approaches (practices) and may help to build consensus on program implementation.

Definition of Terms

Primary pregnancy prevention programs: programs designed to prevent an initial pregnancy

Secondary prevention programs: programs designed to prevent subsequent pregnancies in teen mothers

Abstinence only programs: programs that teach abstinence as the only appropriate method for birth control and do not include information on contraception

Abstinence plus programs: programs that teach abstinence as the preferred or only appropriate method for birth control but also provide information on contraception

Limitations to the Study

Limitations to this study have resulted because studies have targeted different races, age groups, cultures, geographical areas, and may have limited external validity. Studies also vary in how success is defined and for the periods in which long term effects were studied. Leadership, commitment and implementation skills of program leaders vary and ultimately affect the success of the programs. Also, some programs are initiated without the standards of research, and without experimental or quasi-experimental design, and so can provide only limited information. Other limitations are the cost of implementation. Each community has different cost constraints, and therefore a less effective but cost permissible program may be a superior alternative to no program. This necessitates even more community tailoring and weakens the argument for universally acceptable best practices. It may be helpful to propose best practices that address each of the variables regarding race, age, culture or community. Alternatively, strong statistics that demonstrate success may bolster support for pregnancy prevention funding. Researcher bias is a factor in some studies because this is a politically and emotionally charged issue. Each study has been analyzed critically for internal and external validity.

Recommendations for the most efficacious programs may vary by target age group, race, culture and community. Despite limitations there are core principles that can be applied to all teen pregnancy prevention programs, and supply administrators with the information to champion particular practices to achieve optimal results in preventing teen pregnancy.

Organization of the Remainder of the Paper

The following chapters will address the purpose, search strategy, levels of research, and grading of studies. Papers that met the criteria are summarized in table 3 and are reported in the

results section of this paper. Following the summary, recommendations for implementations are addressed in the conclusion section.

Chapter 2: Method

Purpose/Question

Teen pregnancy in the United States has devastating effects on financial, emotional, and health aspects of teen mothers and their children. Determining best practices for pregnancy prevention programs is essential in reducing teen pregnancies and improving outcomes for youth. The question addressed by this project is: What are the best practices of teen pregnancy prevention programs that result in decreased pregnancies in teenage and adolescent girls?

Research Methodology

A systematic literature review was conducted for this study. Due to the extensive amount of research done in this area, a synthesis and analysis of existing data is warranted. A systematic review was selected due to the non-biased nature of the method. It prohibits inclusion or exclusion of data based on researcher bias. Because of the emotion and diverse opinions associated with this issue, a thorough, non-biased review is necessary to determine best practices that will result in optimal outcomes. The Cochrane Library, a central registry for systematic reviews of controlled trials, defines a systematic review as a study that summarizes available healthcare studies to provide a higher level evidence to increase the effectiveness of healthcare interventions (Cochrane Library, n.d.).

Search Strategy

Databases were searched for relevant articles using the following terms located in titles: preg*, prevent* or contraception, program*, and teen* or adolescent, or youth. Databases included CINAHL, Academic Search Premier, MEDLINE, Cochrane Library, Health and Wellness Resource Center, and PsycINFO. An attempt to obtain full text articles was made using resources available through the Regis Library. Additionally, EMBASE, CDC, American College of

Obstetrics and Gynecology (ACOG), and the Pregnancy Risk Assessment and Monitoring System (PRAMS) from the Colorado Department of Public Health and Environment site were searched. National Guidelines Clearinghouse (NGC) was also searched, but because search yielded 153 unrelated results it was eliminated from the study. Inconsistencies in the search engine fields required slight modifications to the search terms used. An attempt was made to be as consistent as possible within the limitations of the systems.

Inclusion Criteria:

1. Studies that assess pregnancy prevention programs for effectiveness of preventing pregnancy in youths 20 years or younger.
 - a. programs may be administered through school or neighborhood programs or clinical offices
 - b. no time frame for study was excluded, however, literature searched encompassed works published between January 1998 – June 2008
2. Any program targeted at youth (male or female) age 20 and below.
3. Outcomes – Studies that assess pregnancies prevented.
4. Spontaneous or intentional abortion was not considered as prevention. The exception to this is inclusion of IUDs used in birth control as IUDs do not prevent conception. Note: this was a limitation to the data as some studies monitored births in lieu of pregnancies prevented.
5. Study designs – All studies that met above criteria

Studies included for consideration targeted teens and adolescents less than 21 years in age. All sound studies were analyzed regardless of method.

Exclusion Criteria:

Studies that focused on other areas of teen development or sexually transmitted diseases which did not include pregnancy reduction as a primary focus were excluded. Additionally, studies not published in English and studies published prior to 1998 were excluded. Full text articles not available through the Regis library system and its affiliates including Loan Ranger, and not available via internet were excluded. The exception was for articles obtained through EMBASE available through the University of Colorado Medical Center.

Grading of studies:

The type of research used for each study is associated with levels used to determine best practice guidelines. As the level of research increases, the grade of recommendation for implementation increases as well. Studies were assessed using the Melnyk system for evaluation (Melnyk & Fineout-Overholt, 2005, p.10). Table I summarizes these levels:

Table I: Melnyk Rating System for the Hierarchy of Evidence

Level I	Evidence from a systematic review or meta-analysis of all relevant randomized control trials (RCTs), or evidence – based clinical practice guidelines based on systematic reviews of RCTs
Level II	Evidence obtained from at least one well- designed RCT
Level III	Evidence obtained from well- designed control trials without randomization
Level IV	Evidence from well designed case – control and cohort studies
Level V	Evidence from systematic reviews of descriptive and qualitative studies
Level VI	Evidence from a single descriptive or qualitative study
Level VII	Evidence from the opinion of authorities and/or reports of expert committees

All levels were confirmed by a second reader; a third reader was used for discrepant cases.

Once preliminary classifications were established, the quality of each study was analyzed and studies were classified as good, fair, and poor based on the quality of sound research practices.

Recommendations / Grading:

The value of recommendation is assigned the following grades in Table II (Henderson & Rhealt, 2004, p. 38):

Table II: Henderson and Rhealt Recommendations

Grade A:	Recommendations are made for outcomes supported by at least one (1), and preferably more than one, Level I study.
Grade B:	Recommendations are made for outcomes supported by at least one (1) Level II study.
Grade C:	Recommendations are supported by Level III, IV, and V studies.

Levels VI and VII studies receive no recommendations.

Sample size:

Sample size was determined by the available data in the established published time frame. Latter searches yielded many duplicate articles, and hence it was presumed saturation of data was reached. 14 out of 138 articles met the inclusion criteria.

Chapter 3: Results

The literature review produced a total of 138 articles. Fourteen articles including 3 literature reviews met the inclusion criteria established. Programs used heterogeneous delivery methods and targeted diverse populations. Many of the programs described themselves as abstinence- only; however, further research found that these programs also provided contraceptive knowledge. No studies which were true abstinence only (no teaching of contraception) met the criteria which included monitoring of pregnancy rates. Articles that met the established criteria were assigned a research level according to the Melnyk Rating System for the Hierarchy of Evidence. (See Table 1) This system assigns a level 1 rating to systematic reviews of random control trials and level 2 to single random control trials. In this study Level 1 was not assigned to data merely because it was cited in a systematic review. More than one similar program from the review was necessary for it to achieve level 1 status. Dissimilar programs cited individually in a systematic review were evaluated as stand alone research and received level 2 ratings as warranted. Since pregnancy rate monitoring was part of the initial inclusion criteria, only programs that used pregnancy rates as outcome measures were extracted from literature reviews. Results are divided into categories of primary and secondary pregnancy prevention programs. The results are summarized in Table 3. All programs listed as successful showed changes in pregnancy rates that were statistically significant.

The most promising primary prevention programs include TeenSTAR, Postponing Sexual Involvement (PSI) California's Adolescent Sibling Prevention Program, and Teen Outreach. These programs encompass a variety of strategies that can best be categorized as abstinence plus.

Successful components included:

- Abstinence as the preferred method
- Basic, accurate, contraceptive knowledge with or without access to contraceptives
- Accurate information about unprotected intercourse and how to avoid it; services designed to reduce risky sexual behaviors
- Self- esteem building
- Assertiveness, negotiation skills
- Theoretical approach with role play
- Reinforcement of values, address social media pressures
- Behavioral goals, academic progress, and volunteer service
- Variety of teaching methods that are appropriate to age, sexual experience, and culture
- Qualified, well trained teachers and enough time for completion of activities

Providing contraceptive information was an important component of successful programs in this study. Community involvement, raising self esteem, and goal setting were also important aspects of successful programs. However, the Franklin and Corcoran study found that contraceptive knowledge and distribution was the most effective intervention for reducing pregnancies in adolescents (Franklin & Corcoran, 2000). Another systematic review by Bennett and Assefi in 2005 concluded that much of the recent decline in teenage pregnancy rates can be attributed to an increase in contraceptive use, with a smaller portion being attributed to decreased sexual activity (Bennett & Assefi, 2005).

Successful secondary programs include The Second Chance Club, early adoption of the contraceptive implant, and a school- based intervention for teen mothers. These provided a variety

of services such as education regarding contraception, self-esteem, and assertiveness. There was one consistent theme of services provided in successful secondary pregnancy prevention programs which was easy and immediate access to effective contraception.

Table III:

Primary Interventions							
Effective Primary Interventions							
Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
Adolescent pregnancy prevention: an abstinence - centered randomized control intervention in a Chilean public high school (Cabezon et al., 2005)	TeenSTAR	1259 Chilean public high school students	Abstinence centered with contraceptive education. Teaches self esteem, assertiveness, negotiation skills	1997 intervention vs. control group pregnancy rates were 3.3% and 18.9% respectively. 1998 cohort were 4.4% and 22.6% respectively	II / Good	Good randomization; abortions illegal in Chili and not easy to track making pregnancy estimates difficult	Grade B
Abstinence-Based Programs for Prevention of Adolescent Pregnancies Author: (Thomas, 1999)	Postponing Sexual Involvement was only program that met criteria and showed improvement	Atlanta cohort of students entering eighth grade in 1985. 99 % Black.	Abstinence plus, theoretical approach, reinforcement of values, addressed social media, training in refusal skills, role play	33% decrease in pregnancies among the treatment group females at end 9th and end 12th grade	IV / Fair	80% retained at the follow-up at the end of 9th grade and 45% at the end of 12th grade. Medical records were used to validate pregnancy reporting	Grade C
An Evaluation of California's Adolescent Sibling Pregnancy Prevention Program Authors: (East, Kiernan, & Chavez, 2003)	California's Adolescent Sibling Pregnancy Prevention Program (ASPPP)	1176 predominantly Hispanic 11-17 year olds with at least one sibling who was an adolescent parent	Face to face contact monthly and services designed to reduce risky sexual behaviors. No consistency in services was required	43% decrease in pregnancies	IV / Fair	20% attrition. No consistency of services provided	Grade C

Primary Interventions							
Effective Primary Interventions							
Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
Teen Pregnancy Prevention: Do Any Programs Work? (Card, 1999)	Effective programs that met inclusion criteria are: Tailoring Family Planning Services To The Special Needs of Adolescents: New Adolescent Approach Protocols, Postponing Sexual Involvement (PSI), School / Community Program for the Sexual Risk Reduction Among Teens, Teen Outreach	Teens and adolescents ranging from 11-21	Focus on theoretical approaches demonstrated in reducing risky sexual behaviors, behavioral goals, teaching methods that are age, sexual experience, and culturally appropriate, allow enough time for completion of activities, provide accurate information	all programs showed decrease in pregnancy rates	IV / Fair	Reporting format made it difficult to evaluate each study independently	Grade C

Effective Primary Interventions							
Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
School-based teenage pregnancy prevention programs: a review of the literature (Hoyt & Broom, 2002) (Advocates For Youth, n.d.)	Teen Outreach was only successful program that met criteria (2 studies cited)	teens 12-17	Encourage academic progress and volunteer service in a learning community. Provide information on both abstinence and contraception and ensure access to contraceptive services	Substantially decreased pregnancy rates	II / Good	Included at least one RCT	Grade B
Preventing Adolescent Pregnancy: A Review of Programs and Practices (Franklin & Corcoran, 2000)	Franklin / Grant's meta analysis	Combined participants from 32 programs	Contraceptive knowledge found to be most effective intervention for decreasing pregnancy rates	Decreased pregnancy rates	V / Good	Data was presented in a format that reduced its usefulness to this study. May have received IV if more data included	Grade C

Primary Interventions

Not Proven Effective Primary Interventions

Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
A Journey Towards Womanhood (Dixon, Schoonmaker, & Philliber, 2000)	A Journey Towards Womanhood	African American women in Durham, North Carolina	Teaches dignity and life skills	Pregnancy rates reduced but not statically significant due to small study	IV / Fair	Control group subject to selection bias. Small study	No recommendation
Effects of a Replication of a multicomponent Model for Preventing Adolescent Pregnancies in Three Kansas Communities (Paine-Andrews et al., 1999)	School / Community Sexual Risk Reduction Replication Initiative	Adolescents from 3 Kansas communities	Sexuality education for teachers and parents; comprehensive, age-appropriate sexuality education K-12; increased access to health services, use of mass media, community, faith community, and school administration involvement	slight decreases in estimated pregnancy rates but not statistical significance not demonstrated	IV / Fair	Resistance to implementation of increasing access to contraceptives in some locations	No recommendation
Teens and Toddlers programme: an innovative and practical youth development programme aiming to raise self-esteem, aspiration and educational attainment (Cater, 2008)	Teens and Toddlers - London	life and negotiation skills, consequence thought	Details not listed	decreased pregnancies compared to national rate but statistical significant not demonstrated	VI / Fair	Details not listed	No recommendation
Zero Adolescent Pregnancy: A Prevention Program at Work that Works (Dykerman & Grey, 2005)	Zero Adolescent Pregnancy	Geared towards parents of adolescents	at work program for parents to teach methods for discussing sex with their children	goal reached but not enough data to evaluate	VII / Poor	No baseline data to compare results to	No recommendation

Primary Interventions							
Not Proven Effective Primary Interventions							
Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
School-based teenage pregnancy prevention programs: a systematic review of randomized trials (Bennett & Assefi, 2005)	Project SNAPP Postponing Sexual Involvement	School aged children from various US communities	abstinence only and abstinence plus	No programs that met criteria for inclusion showed statistically significant decrease in pregnancy rates	II / Good	Varied by program	No recommendation
Secondary Interventions							
Effective Secondary Interventions							
Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
Efficacy of a Secondary Adolescent Pregnancy Prevention Program: An Ecological Study Before, During and After the Implementation of The Second Chance Club (Key, O'Rourke, Judy, & McKinnon, 2006)	Second Chance Club	63 teenage mothers, 99% African American, mean age 16	Intensive case management by social worker, home visits, comprehensive medical care	17% repeat pregnancies vs. 33% for control group	IV / Fair	Selection Bias - participants remained in school, control may or may not have been in school	Grade C
Preventing Repeat Adolescent Pregnancies with Early Adoption of the Contraceptive Implant (Stevens-Simon, Kelly, & Singer, 1999)	Contraceptive Implants	354 poor, primiparous 13-18 year old receiving health services in Denver	Insertion of contraceptive implant in post partum patients prior to leaving hospital	Control group 35x more likely to have repeat pregnancy	IV / Fair	13% lost to follow up. Short study period	Grade C

Effective Secondary Interventions							
Article Title / Author	Program	Participants	Theme / general practice	Outcomes	Level of Research / Quality	Study strengths / Limitations	Recommendation
Teen Pregnancy Prevention: Do Any Programs Work? (Card, 1999)	Elmira Nurse Home-Visiting Program / A Health Care Program for First-Time Adolescent Mothers and Their Infants / Queens Hospital Center's Teenage Program / A School-Based Intervention Program For Adolescent Mothers	Adolescent mothers in the US	Services geared toward infant care but exposure to health care professional increased opportunity for contraception and other services for mother	Reduced repeat pregnancy for all groups	IV / Fair	Abbreviated format limits evaluation	Grade C
Effectiveness of an Intensive, School-based Intervention for Teen Mothers (Key, Gebregziabher, Marsh, & O'Rourke, 2008)	3 component school-based intervention	63 girls < 20 years (mean 16) 99% African American	case management by a school based social worker, home visits, available by cell phone, educational support group, comprehensive health care	Subsequent repeat births 17% vs. 33% in control group	IV / Good	Discusses cost	Grade C
Not Proven Effective Secondary Interventions							
none found							

Chapter 4: Conclusion

Inestimable research time, energy, and dollars have been devoted to discovering the best elements of pregnancy prevention programs. One intervention program calculated the cost to be \$15,156 dollars per pregnancy prevented; however, because many teen mothers and infants are provided for by society at a much greater cost, the estimated savings is \$19,097 per birth prevented (Key, Gebregziabher, Marsh, O'Rourke, 2008 p.398). This cost does not factor in societal costs found by other investigators which include lower cognitive scores, lower educational aspirations, higher rates of criminality, higher rates of violent crime, and greater likelihood of becoming a teen parent (Young, Turner, Denny, & Young, 2004).

The majority of the research articles in this study did not meet the inclusion criteria because they did not evaluate pregnancy rates. Greater knowledge could be gained if more programs assessed pregnancy rates because it removes one layer of assumptions from the equation of what program components result in decreased pregnancies. Without monitoring pregnancy rates we are left to assume that desired behavioral and attitude changes lead to the desired results of decreased pregnancies. Additionally, the heterogeneity of program components, background of target subjects, and variances of implementation skills and commitment make the program effectiveness and external validity difficult to assess. Attitudes of the program administrators and councilors may affect consistent implementation of program components and hence affect results. It is possible that some of the programs in this study, without statistically significant results, may have shown more improvement with consistent implementation. One study in Kansas that failed to show significant changes in pregnancy rates cited reluctance by some administrators to distribute contraceptives as a possible cause (Paine-Andrews et al., 1999).

Common characteristics of the effective primary programs include nurturing self respect, community involvement, and contraceptive education. Most follow the “don’t, but if you do…” philosophy. Though many of the programs successful components such as self esteem building and goal setting are worthy in their own right, communities should also add contraceptive information to their programs to maximize effectiveness. Some of the successful programs cited in this research are self described as abstinence programs, however they also provide information on contraception. For secondary prevention programs, counseling and easy access to contraceptive use has been shown to be very effective. Enough evidence exists to recommend TeenSTAR and Teen Outreach at the Grade B level, and California's Adolescent Sibling Pregnancy Prevention Program and Postponing Sexual Involvement at the Grade C level. Additionally, any primary program that incorporates the aspects of abstinence as the preferred method, basic and accurate contraceptive knowledge (with or without access to contraceptives), accurate information about unprotected intercourse and how to avoid it; services designed to reduce risky sexual behaviors, self- esteem building, assertiveness, negotiation skills, theoretical approach with role play, reinforcement of values, address social media pressures, behavioral goals, academic progress, and volunteer service, a variety of teaching methods that are appropriate to age, sexual experience, and culture, qualified, well trained teachers and enough time for completion of activities merits implementation.

Best Practice for a Pregnancy Prevention Program

TeenSTAR and Teen Outreach achieved a Grade B level of recommendation. With the data available thus far, the components of these programs can be recommended as best practices. These components include: abstinence as the preferred method of birth control, basic, accurate, contraceptive knowledge, accurate information about unprotected intercourse and how to avoid it,

services designed to reduce risky sexual behaviors, self-esteem building, assertiveness, negotiation skills, theoretical approach with role play, reinforcement of values, address social media pressures, behavioral goals, academic progress, and volunteer service, a variety of teaching methods that are appropriate to age, sexual experience, and culture, and qualified, well trained teachers with enough time for completion of activities. This study found no programs that received a level 1 rating. However, because of the importance of this issue and because interventions proposed have little risk of adverse side effects cite statistics that say no increase in sex when contraception is taught – implementation of aspects of successful programs is advised.

Recommendations for Future Research

More research with pregnancy rate data would be helpful to refine programs, and better define “best practices” for pregnancy prevention. Future programs should include standard data collection methods and standard implementation methods. Programs are costly and drain our resources. However, they are not as costly as letting teen pregnancy remain a part of our culture. Though evidence at the highest level is not yet available to support implementation of programs, this should not be a deterrent to implementing what is known to work and has additional benefits: building self esteem, confidence, and encouraging lofty goals in our youth. In addition to the estimated \$19, 097 savings per pregnancy prevented in one study (Key et al.), priceless value is added to society by providing these services to our teens and adolescents.

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