

The Baby Think It Over™ Experience to Prevent Teen Pregnancy: A Postintervention Evaluation

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Abstract An evaluation was conducted to describe the personal impact of the “In Your Care” pregnancy prevention intervention program using Baby Think It Over™ infant simulator. Data was collected regarding the attitudes, actual and intended sexual practices, feelings, and opinions of participants 2 or 3 years after the intervention. Student recommendations for program continuation and improvement were also solicited. Male and female 11th grade students in rural and suburban Midwestern communities, who had experienced the program 2 or 3 years earlier, completed surveys and were interviewed in focus groups. Participants vividly recalled and described the simulated experience in statements that reflected insight and feelings about parental responsibility and the consequences of teen pregnancy. The teens also made several recommendations for enhancing the program. The findings suggest that simulated experiences can be a powerful strategy for effective learning about complex decisions regarding the risks of sexual activity and the realities of parenting.

Key words: adolescent pregnancy, adolescent sexuality, infant simulators, program evaluation, program improvement.

The rates of teen pregnancy and births to teens in the United States declined modestly during the past decade

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but still exceed that of the other developed countries (Allen Guttmacher Institute, 1999a; Allen Guttmacher Institute, 1999b; Martin, Hamilton, Ventura, Menacker, & Park, 2002). The sexual behavior of U.S. teens, reported in the Youth Risk Behavior Survey for the same time period, shows only limited improvement (United States Department of Health and Human Services, 2000a). In 1999, nearly 50% of teens reported having had sexual intercourse, 16% reported four or more sexual partners, and only 58% of those sexually active had used a condom at last intercourse.

Healthy People 2010 outlines goals to improve community health by reducing the rates of teen pregnancy by more than 50% during the next decade. The objectives quantify the goals for changes in teen sexual behavior including reducing the proportion who have engaged in intercourse to 25% and increasing to 95% the proportion of sexually active teens who use effective contraception. Currently, 64% of those 18–24 have received reproductive health education. The Healthy People 2010 goal is that 90% of persons in the age group will have received education in sexually transmitted diseases, safe sex, birth control, and abstinence (United States Department of Health and Human Services, 2000b).

Efforts to reduce the incidence of teen pregnancy have included sexuality education programs endorsed as effective by the Centers for Disease Control (Jemmott, Jemmott, & Fong, 1992; Kirby, Barth, Leland, & Fetro, 1991; St. Lawrence et al., 1995) focusing on abstinence, decision making, and contraception. Other programs focused on youth development and have used strategies to enhance self-esteem, mentoring, and goal orientation (Kirby, 1999).

A simulation of the parenting experience using a computerized baby is another approach directed toward the goal of delaying teen pregnancy. The intended outcome is for teens to make better decisions about sexual behavior based on a realistic understanding of the life-changing consequences of unprotected sex. Adolescents who perceive teen parenthood as having positive consequences may be more likely to engage in sexual intercourse and unprotected sexual intercourse (Unger, Molina, & Teran, 2000). The simulation is intended to point out some of the negative aspects of teen parenthood.

Baby Think It Over™ (BTIO) is an infant simulator which is programmed to cry at random. The lifelike cry stops only when “tended” for varying amounts of time by the insertion of a key. The cost of each infant simulator manufactured by BTIO Educational Products Inc. is between \$250 and \$350. The infant simulators have been used extensively both nationally and internationally (BTIO Educational Products Inc., 2002). The infant simulator provides experiential learning about the responsibilities, demands, and frustrations of parenting.

Outcome studies of the programs using the BTIO infant simulator as an intervention have reported changes in student’s attitudes and beliefs about parenting which reflect a more realistic view of the parenting role (Malinowski, 2001; Rosebaum & Parietti, 1997; Strachan & Gorey, 1997) and the importance of partner support (Malinowski, 2001; Rosebaum & Parietti, 1997; Strachan & Gorey, 1997). Out and LaFreniere (2001) indicated that the infant simulation experience increased the teen’s perceived personal susceptibility to an unplanned pregnancy. One quasi-experimental design study failed to demonstrate a statistically significant difference between the experimental and control groups on sexual behavior or attitudes (Somers & Fahlman, 2001). In another study, parents of rural teens were overwhelmingly positive about the BTIO infant simulator and believed that the experience improved communication with their children about parenting and sexuality (Price, Robinson, Thompson, & Schmalzried, 2000). The intent of this evaluation was to describe the long-term personal impact of the “In Your Care” program using the BTIO infant simulator on subsequent decisions regarding sexual activity and recommendations for program improvement.

INTERVENTION

A countywide community level adolescent pregnancy prevention intervention called the “In Your Care” curriculum was implemented in 1996 in a rural Midwestern county. This curriculum, targeted to rural middle school

teens, included a video on the responsibilities of parenting, worksheets, class discussions, journal writing, and a 3-day simulated experience as an infant caregiver with BTIO. Short-term evaluation with pretests and posttests demonstrated increased knowledge about parenting and a greater intent to delay the onset of sexual intercourse for those students who were undecided about their intention to become sexually active. After 4 years of implementation, a more extensive evaluation was planned to examine the long-term effects of the program.

EVALUATION METHODS

The evaluation design included surveys and focus groups. Surveys were used to assess attitudes as well as actual and intended behaviors. Focus groups were used to gather information regarding the benefits of the program and recommendations regarding continuation and improvement.

Surveys were offered to 200 11th grade students who participated in “In Your Care” as an 8th or 9th grade student and returned a signed parental permission. This survey was similar to an original posttest used immediately after the participant completed a weekend experience with the BTIO doll. The survey was conducted to describe the population including attitudes about teen pregnancy and distribution of risk behavior. Questions about the parenting experience and personal intentions related to sexual activity as well as a risk behavior inventory were included in the survey. Fifty students from three rural high schools within the same county completed surveys. The low-return rate may be related to the extra effort in obtaining signed parental permission.

Focus groups enhance program evaluation by providing the consumer perspective. This method has been recommended for use in nursing education and public health as part of a comprehensive approach to evaluation of product and service effectiveness and improvement (Butterfoss, 2001; Loriz & Foster, 2001). The design, quality, and effectiveness of pregnancy prevention programs can be improved with a better understanding of the adolescent participants’ perspective.

A purposive sample of 11th grade students in public schools in three separate school districts, who had completed the “In Your Care” curriculum as 8th or 9th graders, participated in six focus groups. The focus groups of six to seven participants were gender separated and held during school lunch periods. Open-ended global questions were used with each group. Students were asked what they believed were the benefits of the BTIO experience and also asked whether the program should be continued and, if yes, how they would improve the

program. Repetition of data among the focus groups confirmed that saturation had been achieved.

PARTICIPANTS

To assure anonymity of the subjects, the survey was offered to all 11th grade students at four high schools. Chi-square analyses were done to examine the survey responses among the schools to determine whether separate analyses should be done for each school. There were no significant differences in the survey responses among schools. Eighty-eight percent of the students who chose to complete the survey had participated in the “In Your Care” project. None of the respondents reported having ever been pregnant or fathering a child. The respondents were between the ages of 16 and 17 and 64% were female. Fifty-four percent of the respondents had after school jobs. Almost all of these students reported the intention to attend college after graduation.

SURVEY RESULTS

Survey participants expressed realistic attitudes toward parenting 2 years after the “In Your Care” experience with the BTIO infant simulator. These survey results were limited to students who had participated in the BTIO simulation experience. Students unanimously reported that it would take most of a parent’s time to care for a baby. Sixty-seven percent thought 24hr/day was necessary to care for an infant. The remaining responses were between 10 and 23 hr/day. Boys thought that care of an infant took fewer hours per day ($M = 18.22, SD = 5.67$) compared to the girls ($M = 23.32, SD = 1.74$). The mean difference in perception of hours was significant [$t(18.875) = -3.714, p = 0.001$].

Marriage was considered essential or very important before having children by 80% of the participants. Most participants reported that the effect of pregnancy on family relationships would be negative. Eight percent of the students reported that their family relationships would be destroyed if they had a baby, while 74% of the students responded that a baby would make family relationships more difficult. Sixteen percent of the students reported that pregnancy would improve family relationships, and 2% believed that having a baby would have no effect on family relationships. Boys were significantly more likely than girls to indicate that a baby could improve their relationship ($\chi^2(3) = 10.67, p = 0.014$).

Students had realistic perceptions of the effect of child-bearing on goals and plans. Nearly every student (98%) said having a baby would limit their social life. Fifty-eight

percent of those completing the survey believed that future plans would need to be postponed or would be harder to accomplish, while only 42% of students reported that their future plans would actually change if they had a baby now.

Decisions about having intercourse were evenly distributed: 30% reported being sexually active, 32% were undecided, and 38% were not sexually active. More than half, 54%, believed that the risk of pregnancy would prevent them from being sexually active. Forty-eight percent reported having postponed intercourse to prevent pregnancy, while 16% reported having unprotected sex. There was no significant difference between boys and girls regarding their perception of pregnancy risk and postponing intercourse. A larger proportion of students who did not have an after school job reported not having made a decision about engaging in intercourse ($\chi^2(2) = 6.215, p = 0.045$). These students were also more likely to indicate postponing sex to avoid pregnancy compared to students with jobs after school ($\chi^2(2) = 6.657, p = 0.036$).

A risk assessment was developed by the project evaluators to inventory overall risk-taking behaviors such as cigarette smoking, alcohol use, driving after drinking, physical violence, self-inflicted violence, and sexual risk-taking behaviors in the program participants. The proportion of students in each risk behavior is presented in Fig. 1.

Half of the students reported a risk behavior at least once in the previous 30 days. A one-way ANOVA was conducted to examine the differences in mean risk scores among the groups of students who had made a decision to have intercourse ($M = 3.60, SD = 3.16$), who had made a decision not to have intercourse ($M = 1.21, SD = 2.86$), and who had not made any decision

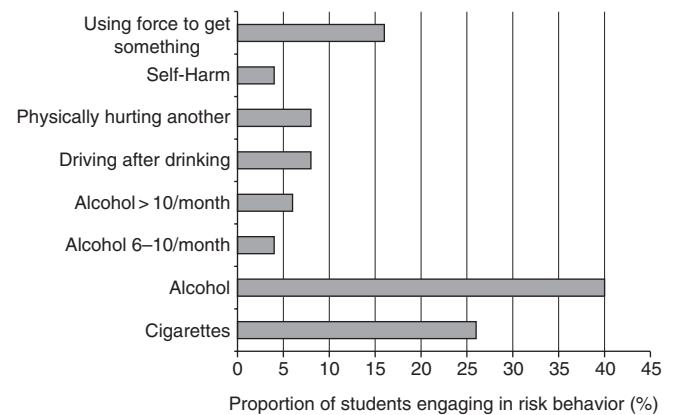


Figure 1. Risk behavior inventory ($n = 50$).

($M = 0.81$, $SD = 1.05$). The students who reported having made a decision to have intercourse had a significantly higher mean risk score compared to both of the other groups of students ($F_{2,47} = 5.488$, $p = 0.007$).

FOCUS-GROUP FINDINGS

Focus-group interviews were transcribed verbatim from audio tapes. Colaizzi's (1978) method was used for analysis. The transcripts were read in their entirety by each of the coinvestigators and notes kept related to the common language and themes that emerged. Participant statements that expressed the meaning of each theme were recorded. The themes and statements were reviewed by a nurse with a doctorate and expertise in the area of qualitative research. Themes were organized in the following categories: parenting realities, feelings, family relationships and behavioral impact, and recommendations for program improvement.

PARENTING REALITIES

Focus-group participants' initial comments centered on the realities of parenting. These realities were expressed as insights about the relentless responsibilities of care giving and the potential impact of decisions about sex on their lives. A student commented that "People don't realize like when they have sex how much your life can change if you have a baby."

Many mentioned sleep deprivation and the loss of personal freedom. "It takes away a lot of your free time because you have to take care of it all the time." Several described the need for constant vigilance and a sense of guardianship. An illustrative comment was "It's hard. You don't get much sleep and you are so tired but you still have to keep on going."

FEELINGS

Students described the feelings that were inherent in the experience. These included frustration related to meeting the constant demands of the child. A student expressed it this way "At the beginning I was more excited, but the longer I was in the program the more I wanted to get rid of the baby."

Students were embarrassed when they ventured into the community with the BTIO infant simulator. Social disapproval was anticipated, and students said they feared that someone would think that they were carrying a real baby. One student said, "It was embarrassing when you were in a crowd of people and the baby cried and you got weird looks."

FAMILY RELATIONSHIPS

In the focus groups, students described learning about the effect on family as a benefit of the program. They described parents being unwilling to "baby sit" and siblings complaining about being awakened by the crying. The value of this part of the experience was described by one of the students. "It is really important because most people think they know how it would be and they don't and they have babies and think that their parents will take care of everything for them and it is not that way at all." Another student commented on the importance of partner support. "When I do have kids, I don't want to be a single mother. I want somebody there to help me. I'd want to be married."

BEHAVIORAL IMPACT

Focus-group participants described how the experience affected subsequent decision making about sexual practices. Students remarked that the experience scared them and therefore they intended to be more cautious. One student said, "It made people think twice about having sex or getting seriously involved in a relationship." and another related the effect, "To be more cautious."

CAREGIVER ROLE EXPECTATIONS

An unexpected finding in the focus groups was the agreement between male and female participants about stereotypical gender role expectations. The participants clearly articulated the care-taking function as primarily female. Girls reported that the boys did not take the experience seriously. Girls attributed the lack of personal significance on the part of the boys to societal expectations. One girl said, "I think they (boys) took this experience as a joke. Because they do know they have an escape if they father a child. They don't even have to take care of them. They can just pay the child support."

Most research studies using the BTIO infant simulator have been predominantly female (Rosebaum & Parietti, 1997; Strachan & Gorey, 1997; Malinowski, 2001; Somers & Fahlman, 2001). The focus groups in this sample had nearly equal numbers of males and females. The comments of participants reflect societal expectations of primary female gender responsibility for abstinence, contraception, and parenting. Dallas, Wilson, and Salgado (2000) reported that teen fathers did not identify day-to-day care taking as part of their role and teen mothers recognized that child-care responsibilities are disproportionately assumed by the mother. This may account for the fact that boys were perceived as being less serious about the BTIO experience. Boys' comments

concurred with the girl's perceptions of motherhood versus fatherhood. The belief that contraception is primarily a female responsibility was also expressed. A boy commented, "It probably wasn't realistic because a 16-year-old guy by himself probably wouldn't have a baby. It would probably be with the girl." Another boy said, "Why don't parents tell their daughters about using it (contraceptives)?"

LIMITATIONS

The qualitative approach was intended to better describe and understand the viewpoint of the participants related to the BTIO experience and their recommendations for continuation or program improvement. The survey results describe the current behavior of students who completed the BTIO experience. Without a pretest or control group, the findings have limited application and are not intended to measure intervention effectiveness. However, these findings contribute to a richer understanding of these participants.

Future research should include an experimental design to quantitatively measure program effectiveness. In addition, studies to examine the male's perception and involvement in teen pregnancy prevention are also recommended for future study.

PROGRAM IMPROVEMENT

Both male and female focus groups unanimously endorsed the continuation of the program and would prefer it to be mandatory for all students. Several students expressed a desire for a more intense experience by making it longer, including additional exercises such as working as couples and dealing with budgets. One student suggested that, a repeat of a more intense experience in a later grade might give additional insight, as the students' lives become more complex with after school jobs and relationships. The participants also expressed the need for additional information in relation to prevention and dating, namely information about contraception, sexually transmitted infections, and communication in intimate relationships. A student commented, "That baby shows you what it's like to have one, but it doesn't show you how to prevent it."

Another student commented that "They should make Planned Parenthood more available and make it so your parents will not be able to find out about it. I know of a lot of people who don't go there for that specific reason. They are worried that their parents are going to find out."

One student suggested getting parents more involved with the experience to write their thoughts and ideas

and to stimulate more conversation about sex and childbearing.

DISCUSSION

Overall, the survey results and focus-group data indicate that students in this sample believed the consequences of pregnancy and teen parenthood to be negative. Adolescents in this sample reported that they intended to delay childbearing.

Body language and eagerness of focus-group participants to engage in the conversation reflected vivid recall of the infant simulation experience. Adolescents related that the experience with the infant simulator was sufficient to teach or reinforce opinions about the negative consequences of teen parenthood. This is a positive outcome of the program, as adolescents who perceive teen parenthood as having positive consequences may be more likely to engage in sexual intercourse and unprotected sexual intercourse (Unger et al., 2000). This finding may reflect the powerful effect of experiential learning through simulations. The infant simulator provided a safe environment for teens to learn about the realities of parenting. Simulated learning techniques are based upon the philosophy that students remember almost 90%, if they do the job themselves even if only as a simulation (Gokhale, 1996).

These rural teens related that this was only part of the necessary learning and desired a more comprehensive approach that includes information about contraception, sexually transmitted infections, and relationship skills. This is similar to findings of other studies involving urban adolescents. Urban adolescents believed that education about contraception, relationships, and parenting realities would prevent teen pregnancies (Hacker, Amare, Strunk, & Horst, 2000).

Infant simulation experiences focus on teaching teens the responsibilities of parenting, the realities of a teen pregnancy, and the personal consequences involved with early sexual behavior. They do not teach teens the skills required to actually prevent a pregnancy such as refusal skills, contraceptive use, communication skills, and youth development. Multifocused prevention programs have been documented to have substantial and lasting effects on adolescent sex, pregnancy, and parenthood, but there is no one curricula or program that has demonstrated large positive impacts (Moore & Sugland, 1996). For the past 20 years, researchers have examined the problem of teen pregnancy and current program effectiveness. Only one conclusion has been consistent: multifocal approaches to teen pregnancy are essential. Kirby's (1999) extensive review of evaluation research identified

successful programs as those which include accurate information about risk behavior and opportunities to develop communication, negotiation, and refusal skills. Consequently, infant simulations by themselves would not be an adequate or comprehensive approach to teen pregnancy prevention. A comprehensive curriculum would include activities that build self-efficacy and capacity as well as activities that focus on the costs or consequences of early sexual behaviors.

The comments by the student participants regarding access to contraceptives without parental knowledge raises controversial issues in sex education and barriers to obtaining contraception. Evaluation of curricula which include reproductive health issues, for example, sexually transmitted infection, contraception, and school-based clinic services, have not demonstrated an increase in sexual activity. Lack of problem-solving skills has been associated with early onset of sexual intercourse among adolescent females (Felton, 2002). A balance between knowledge, skills, and teen's perceived personal susceptibility to an unplanned pregnancy is essential for curriculum planning.

The findings support the BTIO experience as having family outcomes. These effects range from stimulating discussions related to teen pregnancy to the realization that grandparents will not be the primary caretakers of their infants. Participants made constructive suggestions for improving the program's effectiveness from the adolescent perspective. Students in one focus group stated they would like more parent involvement. One suggestion was, "May be a parents', family's response of what it was like to have a "baby" in the house would be good also. They could say how the teen parent reacted and what they did." In previous studies, teens suggested that increased communication with parents and stressing abstinence would be beneficial in preventing teen pregnancy (Hacker et al., 2000). Parents often report that sex education should be provided primarily in the home (Jordan, Price, & Fitzgerald, 2000; Price et al., 2000). This program provides the opportunity for discussions to occur in the home. The experiential learning in regard to the disruption of family relationships and activities may change the perception of some teens who believe that having a baby might improve family relations.

COMMUNITY CHANGE

In the beginning, the "In Your Care" program using the BTIO infant simulator was a novel experience in this rural/suburban county, and as time passed, it has become institutionalized in the schools. However, the experience in individual families is new and continues to be unique.

Administration continues to support the program, but it is not a standard curriculum requirement in seven out of the nine school districts. Teacher support has been inconsistent across schools. Some faculty members choose not to implement the program, as it is viewed as less academic in the face of competency testing. The program requires greater time commitment from the teachers, as it involves computer technology, family support, and week-end availability.

People outside of the school system have become more familiar with the program, as students travel about the community with the BTIO simulator. This may have increased community awareness regarding teen pregnancy; however, there is no way to measure the extent of public awareness regarding teen pregnancy prevention efforts.

The program compliments abstinence only and abstinence emphasis curricula and programs using the BTIO infant simulator have been implemented in schools with both approaches to sexuality education. The BTIO experience has increased opportunities for adolescents and their parents to engage in sexuality education in a more spontaneous fashion without a formal structure of having the "big" talk. Infant simulation studies, which have been completed, evaluated the experience as a single intervention. It would be interesting to examine this type of learning in combination with other curriculum to measure for added effect.

Teens expressed the overwhelming support for continuing the BTIO experience and also increasing the intensity of the experience and making it a requirement. Individual schools should consider evaluating the comprehensiveness of their human sexuality curriculum. Curricula content requested by students includes accurate information about interpersonal relationships, sexually transmitted infections, and contraception. The distribution of learning experiences across the student's development addresses the teens' concern for information and experience that more closely matches their developmental stage. Although using the BTIO infant simulator is an experiential learning about the consequences of teen sexuality, students clearly expressed the need for additional information and access to contraception.

Incorporating additional parents and students in a coalition could assist in identifying additional ways in which the program could be improved. An ongoing design for evaluation, which provides standardized pretests and posttests, would provide a means of comparing progress toward goals over time and between and among schools with different approaches. The message that responsible sexual behavior and childbearing are equally important for both genders needs to be strengthened.

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