



Recognizing the Costs of Teen Pregnancy: "Baby Think it Over"

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Abstract

Despite recent improvements in teen pregnancy and birth rates, 2000 teens get pregnant each day in the U.S. Innovative strategies that are effective and acceptable within communities are needed to continue these declines in teen pregnancies. Captivating educational interventions enhanced by infant simulators, such as "Baby Think it Over" (BTIO), can discourage teen pregnancy. The purpose of this research was to evaluate a BTIO intervention to determine the effectiveness of the program in changing 236 high school students' perceptions of the costs of teen parenting. From a comparison of pre-test/two post-test measures, it appears the participants recognized that teen parenting would be costly in terms of increased difficulty in making responsible decisions as well as the challenges of juggling school with parenting. They also recognized other costs including negative impacts on relationships, on feelings of personal worth, and the likelihood of diminished achievements in the future.

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Introduction

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Teen pregnancy prevention is a national concern. While we have seen dramatic declines, the US continues to have one of the highest teen childbearing rates among industrialized nations [1]. Approximately 750,000 teens become pregnant each year [2]. Sexuality education interventions that incorporate infant simulators are sometimes used to educate adolescents about parenting as a strategy to decrease teen pregnancy. These interventions, often called "Baby Think It Over" (BTIO), are generally tailored to meet the needs of specific populations based on time, space and resources available. Just as BTIO interventions vary widely, methods for evaluating the effectiveness of these interventions also vary. The purpose of this research was to evaluate the effectiveness of a BTIO intervention in changing the perceptions of high school students regarding the costs of teen parenting.

The BTIO intervention evaluated in this research was developed and presented by educators from the Children's Home Society. Adapted from the Realityworks© curriculum, this intervention was tailored to meet the needs of students while following the guidelines of the county school board. This BTIO intervention, presented annually since 2000 with increasing numbers of participants (> 1000/year) each year, is popular among students and teachers and assumed to be effective as teen pregnancy rates in the county have steadily declined during that time period. Since the onset of the program, BTIO has grown from two classroom presentations in two high schools to over 21 classroom presentations in all six county high schools. During these 13 years the county has dropped from 28th to 47th in the rate of teen births [3]. While many initiatives are in place, it is possible that BTIO may have had an influence on these decreased rates. Prior to this research, the intervention had been evaluated using a brief survey assessing student satisfaction,

which was consistently very positive. After conducting the program for a number of years the educators determined it was time for a more systematic evaluation to examine the effectiveness and to identify changes in order to strengthen the intervention.

Background

Teen pregnancy is an important public health concern often resulting in hardships for teen parents and their children, and contributing to poverty [4]. Children who are born to teen parents usually pay the greatest price for teen pregnancy. These children are more likely to have problems at birth, chronic health problems, and difficulty in school [5]. They are at greater risk for abuse or neglect and less likely to achieve their full potential due to poor school performance [4], difficulty sustaining employment, and criminal involvements [6]

Theoretical Underpinnings

The Theory of Adolescent Sexual Decision Making Influencing Teen Pregnancy provides theoretical support for this BTIO intervention [7]. According to this theory, if adolescents appreciate positive input from others, desire future success and believe in themselves, they are more likely to avoid risky situations that could lead to risky choices resulting in teen pregnancy.

Baby Think it Over

Baby Think It Over (BTIO) interventions are used in a variety of settings to discourage teen pregnancy. Interventions are structured in different ways, but most include teens borrowing infant simulators, so they can experience "realistic" teen parenting. The simulators are programmed to cry, indicating a need for attention such as feeding and changing diapers. Simulators cry randomly with increasing intensity until corrective actions are taken and they are designed to automatically turn off if mishandled or neglected, to prevent damage to the simulator. When returned, printable logs from simulator software

(Continued on page 3)

can be used to evaluate care and stimulate discussions about the challenges of teen parenting.

Some researchers have reported a lack of support for the efficacy of BTIO interventions. Barnett [8] found no significant change in knowledge, attitudes, or parent-adolescent communication about sex or sexual behavior in either experimental or control group participants. Other researchers [9,10] reported no change in knowledge, attitudes, or intentions about teen parenting. In a large statewide BTIO intervention, while parents and teachers reported increased communication about parenting, no changes in students' beliefs and attitudes could be detected [11]. Unique weekend BTIO intervention structuring was not found to be effective either [12].

Other researchers have reported more positive outcomes. In a funded longitudinal study with experimental and control groups of urban, minority middle school students, Somers found a BTIO intervention helpful for control group participants to realize they were not ready for parenthood. Following another BTIO intervention the participants became more aware of the challenges of parenting and the negative impact teen parenting would have on education, career goals, social life and relationships [13]. Roberts and [14] reported increased childcare skills and reinforced awareness of the challenges of childrearing, and importance of promoting abstinence in adolescents following their BTIO intervention. Adolescent females, in a phenomenological study, reported less idealized views of parenting [15] and college students reported increased anxiety due to simulator crying following BTIO simulator experiences [16].

Interventions incorporating infant simulators may have positive effects that require time to mature in order to influence adolescent decision-making [8]. Years after a BTIO intervention, participants in a qualitative study reported continued awareness of the challenges of parenting and half postponed intercourse as a result

[17]. They also believed the intervention should be mandatory for high school students.

Infant simulators can capture the attention of adolescents and promote their engagement. Perhaps the key to success is the quality of the educational component that accompanies simulator use. According to Chavaudra [18], unless a comprehensive educational program that includes financial, emotional, relationship, and future achievement consequences accompanies simulator use, negative rather than positive outcomes might result. Positive outcomes were reported by Kuhn [19] in Milwaukee, Wisconsin where simulators were a component of a large city-wide effort to lower the teen pregnancy rate.

Our BTIO intervention was unique in that the educational component was the primary focus of the intervention and the simulators, since limited in number, were secondary. Simulators were given to only 27% of the participants at the conclusion of the week-long in-class intervention. Student interest and engagement was increased by the possibility of taking home a simulator, or having a friend take one home. The intervention was presented to 18 to 35 students daily from Monday to Friday during a 50 minute health class. Data were collected in 21 different classes from seven to 19 students in each class. Students returned simulators on the following Monday.

This intervention was designed to help students appreciate the social, financial, and emotional costs of having a baby as a teen. Each student was given a unique life scenario card (randomly distributed) with age (ranging from 16 to 28), educational level (9th grade to PhD), marital status (single or married), and number of children (one or two) designated for the exercise. During the intervention, students had to find housing and jobs, based on the stipulated scenario, and complete a one month budget to pay for all of their children's and their living expenses using only the amount of money the job they chose provided. Students were provided a book of relevant information

in the form of newspaper ads including: employment opportunities (job titles/descriptions) with educational requirements and salary; housing (apartments, houses, mobile homes, student housing, and living with parents (for 16 year-old only) with monthly costs; child care, (had to decide which center—each with a different hourly rate—fit their schedule); utilities based on size of house, (electric, heat, water, sewer, garbage, recycling, telephone, and cable); laundry for number of people in the home; food and meals based on number of adults in the home (purchasing groceries and eating out if possible); transportation to and from work (purchase car, bus pass, taxi, ride share, or carpool; purchasing a car included paying for repairs and gas). They had to juggle their schedules between work, school, and daycare, because not all daycare centers were open during weekends and the bus did not run on weekends. The book also had price lists for insurance (home, car and medical), health and beauty items, clothing, household supplies, pets, miscellaneous items, and infant supplies. The students had to choose where to purchase items since discount stores, department stores and specialty stores all had different prices. They also had to include entertainment, gifts and charity expenses. All items had to be included in the budget that was calculated on a three page worksheet. As time allowed, discussion of prepared budgets (anonymously) was held during class, and students were given opportunities to make revisions if needed. The intervention also included discussions about the challenges of parenting including videos about Shaken Baby and Sudden Infant Death Syndrome.

On the final day of the week, students, selected by their teachers, were given infant simulators to take home for the weekend. Most teachers chose students based on the order in which they returned their permission slips. Students returned borrowed simulators the following Monday. After returning their simulators, each student was given a print-out of the "care" of the simulated baby and participated in a final discussion about the "parenting" experiences with classmates. At

the conclusion of the intervention, teachers graded the students on their participation.

BTIO interventions vary widely because they are tailored for different populations and evaluated in different ways, often with instruments developed by researchers. The BTIO intervention evaluated in this research likewise is unique, but the evaluation was conducted with a standardized measure that can be used by other researchers in the future.

Materials and Methods

Participants

Female and male students from a South Florida public high school completed a pre-test and two post-tests to determine the initial effectiveness of this BTIO intervention in changing high school students' perceptions of the costs of teen parenting. Responses from 236 students who completed all three surveys (pre-test and post-tests one and two) were utilized for this evaluation. Ages ranged from 14 to 17 with a mean age of 14.78 years. The demographics of these students appear in Table 1. Due to the limited number of simulators available, only 64 (27%) of the participants took home simulators during the final weekend of the intervention.

The Thoughts on Teen Parenting Survey© (TTPS) was used to evaluate the effectiveness of this BTIO intervention. The TTPS is a valid reliable instrument developed to determine the views of adolescents about teen parenting (Herrman, Waterhouse, & Chiquoine, 2011). This survey has been used in a variety of settings including other BTIO intervention evaluations (Herrman, et al.). The TTPS has three parts. Part A is designed to collect demographic data and was completed by students only during the pre-test. Part B, the 44-item Perceptions of Teen Parenting Scale (PTPS) was created to collect participants' perceptions of the cost or impact of teen parenting on relationships, finances, education, future career, personal characteristics, and life in general. The

PTPS has an alpha reliability of .89 and yields a composite score of participants' perceptions of costs and rewards of teen parenting that allows for measurement of intervention effectiveness through pre- and post-testing. The lower the cumulative score, the higher the costs and lower the rewards associated with teen parenting. Part C of the survey has 31 items addressing beliefs and attitudes about sexual activity, teen pregnancy and related support systems. Parts B and C are answered using a 5-part Likert scale ranging from "strongly disagree" to "strongly agree".

Procedure

The Children's Home Society (CHS) provides BTIO interventions in the public high schools in the county where this research was conducted. This evaluation took place in the high school with the greatest number of participants. CHS

administrators and educators scheduled and implemented this BTIO intervention. Prior to beginning the project, teachers sent letters to parents/guardians explaining the intervention and requesting consent for

students to take infant simulators home for a weekend. This was an "opt out" program, so students who did not return consent forms participated in the educational component of the program, but were not eligible to take

Table 1. Demographics of Participants (N=236)

Gender	Frequency	Percent
Male	76	32.2
Female	160	67.8
Ethnic		
Caucasian	84	35.6
Black	61	25.8
Latino	48	20.3
Asian	10	4.2
Native American	3	1.3
Mixed	16	6.8
Other	12	5.1
Missing	2	0.8
Free Lunch Eligible (an indicator of poverty)		
Yes	112	47.5
No	71	30.1
Not Sure	47	19.9
Missing	6	2.5
Religious/Spiritual Person		
Yes	115	48.7
No	76	32.2
Not Sure	39	16.5
Missing	6	2.5
Attend Religious Events		
Yes	98	41.5
No	134	56.8
Missing	4	1.7
Sibling Pregnancy		
Yes	33	14
No	196	83.1
Not sure	4	1.7
Missing	3	1.3
Teen Parent		
Yes	63	26.7
No	151	64
Not Sure	19	8.1
Missing	3	1.3
Living With		
2 Parents	150	63.6
1 Parent	64	27.1
Parent/partner	10	4.2
Adult relative	9	3.8
Adult non-relative	2	0.8
Missing	1	0.4

home an infant simulator. If a parent/guardian opted-out, their child was provided an alternative activity. Following approval by the Institutional Review Board of the sponsoring university and the local school board, information about the research and an additional parental consent for the evaluation component were included with the other BTIO information sent to parents. Students who returned intervention consent forms, but not research consent forms, participated in the BTIO program, but not this evaluation.

After signing adolescent consent forms, eligible students completed the Thoughts on Teen Parenting Survey (TTPS) prior to the onset and at the conclusion of the intervention. The participants completed the TTPS a third time at the end of the semester. Due to the scheduling of the BTIO intervention, this final evaluation was conducted from one to four months later. To assure confidentiality, no personal data were collected. All surveys were coded to facilitate matching pre and post-tests.

Data Analysis

Data from the Thoughts on Teen Parenting Survey at pre and post-tests were analyzed using SPSS software. Internal consistency reliability for Part B using Cronbach's alpha was assessed via SPSS at each point (i.e., pretest, posttest 1 and posttest 2). Repeated-measures ANOVA was used to determine whether participants reported significant changes between time points for each item on Part B and Part C, as well as for the total score of Part B. Additionally, a two-way mixed ANOVA was used to determine whether students who took simulators home experienced different trajectory changes compared to those who did not.

Results

The repeated measures ANOVA indicated that no significant differences appeared on the total score of Part B between any time points, $F(2, 226) = 2.56, p = .079$. However, when individual items were

examined, 16 items from Part B and 12 items from Part C resulted in statistically significant differences across the various time points. Of greatest interest were those items that yielded statistically significant change from the pre-test to post test one and that change was sustained at post test two (see Table 2). Of the 16 items in Part B designed to elicit information on any significant differences across time, 11 items revealed a desirable change in attitudes/beliefs about pregnancy as a result of the intervention. Following the intervention, teens were more confident that experiencing a teen pregnancy would cause them to "lose friends," but less confident that pregnancy would "bring boyfriends and girlfriends closer" or "make boyfriends stay in a relationship." They were less confident that they could "juggle school while being a parent" or that they would not "drop out of school." They were more convinced that they would "not achieve as much in future endeavors" and less confident that they would "be more responsible" or "make better decisions," and not "get in more trouble."

Five items from Part B resulted in a change in attitudes/beliefs about pregnancy that were unexpected. Following the intervention, the students were less convinced that their "parents/guardians would be angry," that they would have "less time to spend with friends," and that they would "lose sleep." Initially they strongly disagreed that a teen pregnancy would "make life easier," but became less convinced at the second post test.

Significant changes in student response patterns were apparent on 12 of the items in Part C. Following the intervention, students were more likely to endorse knowing where to "get birth control and protection" and having received "enough sex education in school." They were also less likely to agree that "some girls want to get pregnant." The results from Part C also provide evidence that after completing the intervention, teens had a stronger belief in the effectiveness of birth control, but also a stronger belief that "teaching teens about sex and birth control encourages teens to have sex." They

Item #		Change pre to post 1	Change post 1 to post 2	Change pre to post 2	Over-all <i>F</i>	Overall <i>p</i>
Part B						
2	Less time to spend with friends (strongly agreed, but those convictions decreased following intervention)	0.081	0.095	0.176*	3.66	.027
3	I would lose friends (agreed and more strongly agreed following intervention)	-0.192*	-0.078	-0.269**	6.66	.001
4	Brings boyfriends and girlfriends closer (agreed but became more neutral following intervention)	-0.140	-0.077	-0.217*	5.53	.004
5	Makes the boyfriend stay in a relationship (neutral & decreased in confidence)	-0.176	-0.059	-0.235**	5.44	.005
11	Parents/guardians would be angry (agreed but less strongly following intervention)	0.130	0.116	0.247***	8.16	<.001
20	Easily juggle school & being a parent (disagreed and became more convinced following intervention)	-0.309	0.094	-0.215*	10.079	<.001
21	I would drop out of school (disagreed but were less certain following intervention)	-0.167*	0.021	-0.146	3.85	.022
24	I would not achieve as much in future work (agreed and were more certain following intervention)	-0.204*	-.017	-0.222*	5.24	.006
27	I would be more responsible (agreed but were less sure of this following intervention)	-0.190**	-0.168	-0.358***	13.32	<.001
28	I would get in more trouble (agreed and were more certain of this following intervention)	-0.100	-0.117	-0.216*	4.94	.008
30	It would conflict with my personal values (initially neutral but agreed following intervention)	-0.205*	0.052	-0.153	3.63	.027
31	I would feel bad about myself (neutral but tended to disagree following intervention)	-0.205*	0.004	-.201*	4.63	.010
32	I would make better decisions (agreed but were less certain following intervention)	-0.030	-0.264**	-0.294**	10.45	<.001
38	I would lose sleep (agreed, became less convinced following intervention, but then returned to original rating)	-0.150	0.189**	0.039	4.88	.008
40	It would make my life easier (strongly disagreed, this did not change immediately following intervention, but became less strong at PT2)	-0.013	0.232***	0.219**	9.55	<.001
43	Life would be more stressful (strongly disagreed and this increased immediately following intervention but then decreased at 2 nd post test)	-0.096	0.218*	0.122	3.71	.025
Part C						
47	Having teen parents talk to teens would be helpful (agreed but became more neutral following intervention)	-0.164*	-0.211**	-0.375***	15.18	<.001
48	Teaching teens about sex & BC encourages sexual activity (disagreed but became more neutral following intervention)	0.181**	0.052	0.233**	7.38	.001
51	Teens will get pregnant even if using BC regularly (neutral, agreed immediately following intervention, but this decreased to below pre-intervention level @ PT2)	.115	-0.205*	-0.090	3.56	.029
53	Okay to have baby as a teen (disagreed, but less strongly following intervention)	0.078	0.151	0.228**	4.08	.017
54	Received enough sex ed in school (neutral, but then agreed following intervention)	0.217*	0.143	0.361***	8.84	<.001
57	Children born to teen parents better off (disagreed following intervention, but became more neutral at PT2)	-0.133	0.146*	0.013	3.75	.024
58	Adults truthful with teens about sex & pregnancy (neutral but agreed following intervention; more confidence in adults)	-0.069	-0.233*	-0.302***	7.69	.001
60	Have an adult in life I respect (agreed & more strongly agreed following intervention)	-0.070	-0.143	-0.213**	6.12	.002
61	I know where to get BC or protection (neutral but agreed following intervention)	0.267	0.053	0.320**	8.23	<.001
62	Teen pregnancies usually planned (strongly disagreed but less convinced following intervention)	0.297**	-0.022	0.276**	7.22	<.001
63	Some girls want to get pregnant (slightly agreed but more neutral following intervention)	-0.186*	-0.056	-0.242*	5.15	.006
67	Condoms always work (disagreed, but less strongly following intervention)	-0.065	0.221**	0.156	5.68	.004

Note: Asterisk (*) denotes significance at $a < .05$, double asterisk (**) denotes significance at $a < .01$, and triple asterisk (***) denotes significance at $a < .001$.

were also less likely to endorse a belief that “adults are truthful with teens about sex and pregnancy.”

A second analysis was conducted to determine if students who took home infant simulators perceived greater costs related to early childbearing/childrearing following the intervention than those who did not take simulators. To answer this question, a two-way mixed ANOVA with 3 levels of time (pretest, posttest one and posttest two) as the within-subjects factor and two levels of “took baby home” (yes or no) as the between-subjects factor was used. There were three items that demonstrated significant differences between groups at one or more time points. When asked if they believed they would have “a better life” as a result of pregnancy, students who took a baby home were less likely to agree that they would have a better life than those who did not take home infant simulators at posttest two. Another item asked students whether “Having teen parents talk to teens about what it is like to have their children prevents pregnancy.” On this item, students who took home the infant simulators demonstrated more positive scores at post-test one as compared to those who did not take simulators. Finally, students who took home infant simulators were more likely to disagree with the statement “Making birth control available to teens makes teens more sexually active” both at post-test one and post-test two, as compared to those students who did not take simulators.

Gender, free lunch status, religious person, sibling pregnant, teen parent, and family structure were added as between-subjects variables to the analysis of the total score over time in order to determine whether there were any significant interactions or main effects previously overlooked. Based on the results of this analysis, no significant interactions or main effects of any of the between-subjects variables were noted.

Discussion

As with other Baby Think it Over programs, this one is popular with students, parents, and teachers, and is unique and tailored to the needs of the community.

During this abstinence-based intervention the various forms and success rates of contraception were not addressed because the focus was on helping students become more aware of the costs of teen parenting and the importance, as well as challenges of, providing appropriate care for infants.

Unlike many other programs, this BTIO intervention was successful in helping many of the participants recognize the costs of teen parenting. Statistically significant findings indicate that following the intervention, participants recognized that becoming a teen parent would make life more difficult; that being responsible and making good decisions, as well as juggling school and parenting would be more challenging. Relationships with friends, partners, and parents/guardians would be negatively impacted and some friendships would be lost entirely. Also significant, participants realized that teen parenting would result in feelings of decreased personal worth and diminished achievements in their future work.

Most of the participants were engaged in the intervention and eager to take an “infant” home at the conclusion. However, due to the limited number of simulators, only 27% of participants could borrow one. Some participants enjoyed this parenting experience more than others, but from their discussions, all seemed more aware of the challenges of teen parenting. All of the participants disagreed that they “would have a better life” as a teen parent, but those who took home simulators were significantly more certain of this. These participants also had a high degree of appreciation for the benefits of learning from teen parents and the benefits of having birth control available.

This research was helpful in identifying some other interesting attitudes of the students. These attitudes were consistent over the pre-and post-tests, although not impacted significantly by the intervention. While some adults advocate for abstinence education, the majority of these adolescent participants disagreed with the statement “telling teens not to have sex

(abstain) prevents teen pregnancy.” Only a little over half believed that “if my school provided condoms I would get them there.” Also, despite the prevalence of teen pregnancy these participants believed they did “understand the dangers of unprotected sex,” and did not believe “it is okay to have a baby as a teen.”

Limitations

While this research provides some helpful information, some limitations could have affected the project outcomes. All of the participants were from a single high school, and no control or comparison groups were used, which limits the generalizability of the results. Initially, most students were enthusiastic, hoping to get an infant simulator at the conclusion, which may have influenced their interest in the pre-test. By the final day, enthusiasm for the program had waned and some participants were not interested in repeating the TTPS. Also, disappointment at not being chosen to take home an infant simulator may have influenced post-test answers. Some students who did not return consent forms were interested in the surveys and wanted to assist their classmates, despite being asked to work alone. Six teachers selected the students from their classes who took home infant simulators. This could have biased the comparisons between those who took home simulators and those who did not. Social desirability could have influenced the responses of some participants. However the large number of participants and repeated measures were used to minimize this effect.

Conclusions

Helping adolescents appreciate the costs of early parenting is challenging. Many parents and teachers believe BTIO interventions can be helpful, but research findings to date have not necessarily supported this view. Some researchers have found BTIO interventions to be effective in helping adolescents appreciate the challenges of teen parenting, but many have not. With such mixed outcomes, and the cost of simulators, school health professionals might not be supportive of BTIO

interventions. This research provides an alternative view.

Infant simulators create interest and engagement in BTIO interventions. Used alone, as in some programs, their use may not produce significantly positive outcomes. Instruction related to the costs of teen parenting and benefits of delaying parenting, in conjunction with infant simulators, resulted in greater effectiveness in this research. The declining rate of teen pregnancy in the county where the research was conducted coincides with the increased participation in this BTIO intervention, an interesting observation that will remain just that until validated or refuted in future studies.

This BTIO intervention had a positive impact on the participants’ recognition of the costs of teen parenting. The participants recognized that if they became teen parents, their lives would be more difficult and their future achievements would be compromised. This understanding increased over time. The students who borrowed simulators were even more aware of the difficulties they would face, found parental communication more valuable in preventing pregnancy, and were less likely to believe that making birth control available promotes sexual activity.

Since BTIO interventions are often popular with students, parents, and teachers, more research is needed to determine the best way to implement these. BTIO interventions, of necessity, are unique, but evaluation strategies do not have to be. While strategies differ, the focus of many BTIO interventions is to help adolescents appreciate the challenges of teen parenting. Using reliable, valid instruments, as in this study, provides new opportunities to compare intervention effectiveness.

Implications

The costs of teen pregnancy are enormous and impact the nation, individual states, and communities, as well as teens and their children. BTIO interventions also require significant investments of limited resources.

Teen pregnancy is a concern to school health professionals because it can result in disruption of education and student loss. A significant number of participants in this study recognized that teen pregnancy often derails academic plans and future success. Interventions that engage students and increase their awareness of the costs of teen parenting are a good investment if effective in preventing pregnancy.

Discussing evidence-based pregnancy prevention methods, such as correct use of condoms and other contraceptive methods, within schools can be challenging and is prohibited in many communities. BTIO interventions provide an alternative pregnancy prevention strategy by helping adolescents appreciate the costs of teen parenting. However, combining BTIO interventions with open discussions about safe-sex pregnancy prevention strategies could be even more effective.

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