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An Evaluation of the Teen Outreach Program

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AN EVALUATION OF THE TEEN OUTREACH PROGRAM

BY

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Abstract

The Teen Outreach Program (TOP) is a well-documented, successful intervention designed to decrease teen pregnancy and academic failure (Allen, Philliber, Herrling, & Kuperminc, 1997). TOP combines classroom-based education and life skills training with community service. In this secondary data analysis, 36 students who participated in TOP throughout one school year were compared to 36 matched comparison students. A quasi-experimental cross sectional design was used to examine program outcomes. Four chi-square tests were conducted in order to examine the hypothesized association between group participation (e.g. TOP intervention versus comparison), teen parenthood status, condom use, and the endorsement of sex-related resistance skills. Five Analysis of Variance (ANOVA) tests were conducted in order to test the hypothesized group differences in: 1) sex-related beliefs and attitudes and 2) the ego strength of competence, identity conflict resolution, and personal expressiveness. One significant result was found that indicated intervention related benefits for recent condom use.

Promoting Adolescent Health

Teen Pregnancy

The rate of teen pregnancy in the United States (US) has been steadily declining over the last decade (Card, 1999; Klein, 2005) although at least 40 percent of teenage girls still become pregnant prior to age 20 (Henshaw, 2004). Out of the roughly 900,000 teenagers who become pregnant in the US each year, approximately half of those pregnancies result in live births (Kirby, 2001). Despite an overall decline, the teen pregnancy rate is higher in the US than in any other industrialized country in the world (Card, 1999; Flanigan, 2001; Kirby, 2001; Klein, 2005).

Teen pregnancy is linked to a variety of challenges for teen mothers, their children and families, and society (Allen, Philliber, Herrling, & Kuperminc, 1997; Klein, 2005; National Campaign to Prevent Teen Pregnancy, 2002). Teen mothers often face many of the potential negative consequences of teen parenthood, including complications during pregnancy, dropping out of high school, single parenthood, poverty, and delay in meeting life goals (Card, 1999; Carter & Spear, 2002; Maynard, 1996; Rothenberg & Weissman, 2002). The cost of services related to teen pregnancy is more than \$7 billion annually (National Campaign to Prevent Teen Pregnancy, 2005).

In the present study, teen pregnancy was conceptualized as having become pregnant or caused a pregnancy recently or in ones' lifetime. Potential intervention related changes in the frequency of teen pregnancy among program participants were examined in this study.

Adolescent Risky Sexual Behavior

In order to successfully lower teen pregnancy rates, programs need to decrease the frequency of teen sexual activity and/or increase teen's use of contraceptives (Bennet & Assefi, 2005). In a nationally representative sample of over 15,000 high school students in 2003, the Centers for Disease Control and Prevention (CDC) reported that 46.7% of students surveyed had engaged in sexual intercourse at least once (CDC, 2004). Sexual intercourse prevalence rates were higher for males than females overall. African-American students reported the highest prevalence rate for sexual history (67.3%) followed by students of Hispanic decent (51.4%). Caucasian students reported the lowest prevalence rate for sexual history (41.8%).

The use of condoms among American teens has increased to an average rate of 44% over the last two decades, which may be due in part to increased sex education (Card, 1999). Despite increased contraceptive use among teens, many fail to use contraceptives correctly or consistently (Kirby, 2001). Rates of sexually transmitted diseases (STDs) among US teens remain high, accounting for one-fourth of all STD cases (Card, 1999; Kirby, 2001). Teen STD rates coupled with the fact that 90% of teen pregnancies are unintentional (Klein, 2005) strongly suggest the continued need for prevention programs that can either decrease sexual activity or further improve contraceptive use among sexually active teens.

Indices of risky sexual behavior used in the present study included self reported condom use (e.g., "The last time you had sex: Did you or your partner use a condom?"), as well as scales of the following constructs: sex-related resistance skills (e.g., "What would you do if someone kept pushing you to have sex when you didn't want to?"), sex-

related knowledge (e.g., “Not having sex is the only 100% effective way to avoid pregnancy and sexually transmitted diseases {STDs}”), sex-related normative beliefs (e.g., “I believe it’s okay for people my age to not have sex”), and sex-related attitudes (e.g., “I can show love and affection for a boyfriend or girlfriend without having sex”). Intervention related changes in the frequency of teen condom use, sex related resistance skills, knowledge, beliefs, and attitudes were examined in the present study.

Positive Youth Development

In recent years, some researchers have begun to focus on positive youth development (Damon, 1998; Damon & Gregory, 2003; Lerner, Dowling, & Anderson, 2003). Positive youth development is based on a developmental systems model. In this model, development results from changes in the bidirectional relations between individuals and their contexts (Lerner & Castellino, 2002). People can develop in a positive, healthy way when there is a congruent person-context relationship.

Positive youth development programs aim to address teen risk behaviors by changing the relationships between youth and their communities. As teens make contributions to their communities, positive changes are thought to occur in person-context relations, resulting in positive developmental outcomes for teens as well as their communities (Lerner, et al., 2003). Volunteerism is thought to help teens build developmental assets, or strengths, which can prevent or ameliorate problem behaviors (Kirby, 2001; Moore & Allen, 1996).

Indices of positive youth development in the current study included scales of the following constructs: the ego strength of competence (e.g., “I have strengths that help me to be effective in certain situations”), identity conflict resolution (e.g., “I change my

opinions of myself a lot”), and personal expressiveness (e.g., “When I do things to help someone, I feel more intensely involved than when I do most other activities”).

Programs to Prevent Teen Pregnancy/Risky Sexual Behavior and Promote Positive Youth Development

Identifying the program models that are most successful in decreasing teen pregnancy/risky sexual behavior by promoting positive youth development is essential. In a review of risk factors for teen pregnancy, sexual activity, and lack of contraceptive use, greater than 100 antecedents were identified (Kirby, 2002). The wide variety of factors that can contribute to teen pregnancy/risky sexual behavior has yielded a wide variety of prevention programs.

In a recent review of research findings for teen pregnancy prevention programs (Kirby, 2001), youth development programs that include a community service component were identified as one of the most successful models for reducing teen pregnancy rates. The two programs with the greatest evidence of success were TOP (reviewed below) and the Reach for Health program (O'Donnell, et al., 1999). Other promising youth development programs incorporating community service include the Leadership and Resiliency Program (LRP), Skills for Adolescence (SFA) Program, and the Quantum Opportunities Program (Lattimore, Mihalic, Grotmeter, Taggart, & Elliott, 1998).

There are several characteristics shared by successful teen pregnancy prevention programs. Programs that have demonstrated positive outcomes for youth typically utilize a theory based approach linked to influencing health-related behavior, provide accurate information on sexual risk behaviors and prevention of pregnancy and STDs, often contain a community service element, involve learning about and practicing

communication skills (sometimes including sexual refusal skills), and are long-term (more than just a couple sessions) so desired changes have time to occur (Kirby, 2001).

The Teen Outreach Program

One school-based prevention program that has shown promise over the last decade is the Teen Outreach Program (TOP). TOP, which originated in 1978 (Allen & Philliber, 2001), has been implemented across the US. It is estimated that TOP now serves 6,000 or more students a year (Allen & Philliber, 2001). Program evaluations of high school TOP have reported 30-50% decreases in teen pregnancy and school failure rates consistently over the last ten years (Allen, Philliber, & Hoggson, 1990; Allen, Kuperminc, Philliber, & Herre, 1994; Allen & Philliber, 2001).

TOP combines involvement in community service activities with education and skills training sessions conducted in the school. In addition to decreased teen pregnancy and school failure, TOP has generated other positive outcomes. A need for programs that may be able to minimize multiple problem behaviors with one strategy has been advocated in the research literature (Allen et al., 1997). The major focus of TOP is on influencing broad developmental factors rather than solely focusing on the problem behaviors it aims to prevent or reduce. The implementation of programs like TOP may be more fruitful and less costly than programs addressing adolescent problem behaviors separately.

The educational component of TOP takes place in the school setting, and topics for discussion are designed to be relevant to teens, such as human growth and development, self-understanding, personal values, and coping with family issues (Moore

& Allen, 1996). Life skills topics such as decision-making, goal setting, and dealing with relationships and peer pressure are also typically addressed.

As part of TOP, adolescents actively get involved in the community through volunteer service experiences. The inclusion of the community service aspect of the program is based on Riessman's "helper-therapy" principle (Riessman, 1965). The act of volunteering places adolescents in the role of a "help-giver" instead of a "help-receiver". The principle is based on the notion that personal growth can result from the act of helping others, especially for people from disadvantaged backgrounds. The "helper-therapy" principle suggests one mechanism by which volunteer work in the TOP might benefit students (Allen, Philliber, & Hoggson, 1990).

As previously mentioned, prevention programs rooted in a developmental perspective, such as TOP, do not focus solely on decreasing risk factors and increasing protective factors; alternatively, they have a broader goal of promoting overall positive youth development. These promotion efforts foster developmental assets or strengths (Ferrer-Wreder, Stattin, Lorente, Tubman, & Adamson, 2004).

It has been suggested that volunteerism may lead to the development of autonomy and prosocial societal values that are associated with social competence (Allen et al., 1994; Allen, Philliber, & Hoggson, 1990; Staub, 1979). The enhancement of participant's competence in making decisions, interacting with others, and in recognizing and managing their emotions are all TOP goals (Allen et al., 1997). Providing teens with a deeper knowledge of community problems (and solutions), as well as furthering their cognitive and moral development are additional proposed outcomes of TOP (Moore & Allen, 1996).

Adolescents who view themselves as socially competent are in turn less likely to exhibit adolescent problem behaviors such as teen pregnancy and failure in school (Allen, Weissberg, & Hawkins, 1989). These strengths may be gained through the personal growth spurred by the volunteerism component of TOP.

As teens have positive experiences working with and affecting the lives of others, positive changes in one's perceptions of self can occur. Empowered adolescents experience greater self-esteem, a sense of autonomy, and social competence (Moore & Allen, 1996). These developmental assets may be mediating factors in decreasing teen pregnancy. Despite reported correlations among these variables, there has been little "process to outcome" intervention data to confirm these connections (Moore & Allen, 1996).

Although the success of the TOP has been demonstrated through large scale research projects, only a few studies have investigated the specific factors that contribute to lower rates of teen pregnancy and school failure (Allen et al., 1990; Allen et al, 1997; Philliber & Allen, 1992).

Allen and Philliber (2001) looked at the differential outcomes of more than 3,300 students who completed TOP. These researchers found the program to be more successful with students identified as high risk although low risk students also benefited. In regards to ethnicity, racial and ethnic minority students considered high risk for academic failure had better outcomes than high risk, nonracial/ethnic minority students. These results suggest that while the program works well as a universal intervention, the most useful mode of implementation may be with selected and indicated student populations.

TOP has had a similar impact on teens that had been suspended prior to the program as opposed to those who had not been suspended. Equal levels of program utility have been found for adolescents with varying family characteristics (Allen & Philliber, 2001). Teens who came from one or two parent families had similar success rates; parental education levels also failed to be a factor in student outcomes.

A study in 1990 (Allen et al.) reported that TOP program related benefits were not associated with gender nor race. However, gender was found to be associated with program related outcomes in another large scale, multi-school TOP evaluation (Allen et al., 1997). Specifically, reduction in teen pregnancies for female students in TOP was greater than the decrease in reported responsibility of pregnancies by male participants.

Initial evaluations of TOP were conducted as part of a national replication. TOP participants had significant decreases in teen pregnancy, school dropout and failure, and suspensions from school (Allen, Philliber, & Hoggson, 1990; Philliber, Allen, Hoggson, & McNeil, 1989). TOP has reportedly been more successful with older students (high school rather than middle school students), and when the volunteer portion was implemented more intensely (Allen, Philliber, & Hoggson, 1990). Greater decreases in youth problem behaviors have also been observed at schools that promoted autonomy and relatedness between participants, their peers, and adults (Allen, Kuperminc, Philliber, & Herre, 1994).

Although evaluations of TOP appear promising, initial TOP studies did not use randomized controlled designs. The most rigorous TOP program evaluation was conducted on approximately 700 high school students using a randomized control trial (Allen, Philliber, Herrling, & Kuperminc, 1997). Comparisons of pre- and post-test data

showed declines in teen pregnancy, school suspensions, and course failure, providing support for interventions that aim to prevent multiple teen problems through positive youth development strategies.

Study Goals

This TOP effectiveness trial was implemented in an urban high school in the Northeastern United States. In this secondary data analysis of this data set, 36 students who participated in TOP over the course of one school year were compared to 36 matched comparison students. A quasi-experimental cross sectional design was used to examine program outcomes.

The contribution of the current study was two-fold. First, this intervention trial provided further evidence for TOP's effectiveness in changing various intended outcomes. Unlike past TOP related research, this study utilized a wider measurement net by including a broad array of positive youth development indices in order to investigate multiple program outcomes. Secondly, this study was a true effectiveness trial in that it was conducted by school district personnel and not by academic researchers or individuals connected with the program developers. The current study was in response to the recent calls for a new generation of interventions that can withstand a wide range of program fidelity and still yield intended benefits.

Specific Aims

Based on a review of prior research, the following hypotheses were tested: 1) It was predicted that TOP would be associated with a decreased incidence and/or prevalence of teen parenthood among program participants, relative to a matched comparison group; 2) It was predicted that TOP participants would also report greater

condom use and show improvements in sex-related resistance skills, knowledge, beliefs and attitudes after the intervention relative to a matched comparison group; and 3) It was predicted that TOP participants would show program related benefits on the positive youth development indices measured in this study relative to a matched comparison group.

Method

Participants

Students in an urban high school in the Northeastern United States were offered the opportunity to take part in TOP. Thirty-six high-school students opted to participate in TOP. Approximately half of the TOP group members were male (n=17) and female (n=18). Participants included 29 African-American students, three Latino/Hispanic students, one White student, and two students who selected “other” as an ethnic identifier. One TOP participant did not provide information on gender or ethnicity. The comparison group consisted of 36 students who were matched to TOP participants in regards to gender, ethnicity, grade, and year data was collected. The year the student survey data was collected was also consistent between groups in order to minimize the impact of possible historical factors that may have changed within the high school year to year.

Procedure

TOP was instituted as one component of a Safe Schools/Healthy Students (SSHS) program at an urban high school in the Northeastern United States. SSHS is a national initiative that aims to provide comprehensive intervention services to students. The study’s sample was drawn from a larger data set collected as part of the SSHS program.

All students in grades 6-12 in this school district completed a student survey in fall 2003, 2004, and 2005. Parents or guardians of students attending the high school (study site) were mailed information regarding the study at the beginning of each school year. The materials sent home included the study's ethics policy, which explained that a confidential self-report survey would be collected from students given permission to do so. Parents or guardians were told to contact the researchers if they did not wish to consent to their child's participation. The total number of students who were granted parental consent and returned a completed survey was 2,664 in 2003, 2,633 in 2004, and 3,076 students in 2005. The response rates for each year were 77%, 71%, and 66%, respectively.

High school students were offered the opportunity to take part in TOP starting in the fall of each academic year. Most students who chose to participate were exposed to TOP for one school year. Some students were allowed to continue receiving TOP programming for more than one year (eight students). Student identification numbers provided a link to connect student survey data with intervention participation (exposure to TOP). The study variables used in the present study were drawn from student survey items.

Measures

Demographics

Students were asked to report their age, gender, and ethnicity.

Sex-Related Indices

Sex-related indices in the current study included teen pregnancy, condom use for sexually active participants, and scales of the following constructs: sex-related resistance skills, sex-related normative beliefs, and sex-related attitudes.

Teen pregnancy. In the present study, teen pregnancy status was evaluated using two questions requiring a yes or no response, “Are you pregnant right now or have you recently caused a pregnancy?” and “Have you ever been pregnant or caused a pregnancy?” The teen pregnancy questions were based on similar items in the TOP intake form (Philliber Research Associates, n.d.).

Condom use. The index of self reported condom use consisted of a single item used in the Youth Risk Behavior Surveillance Survey (Center for Disease Control and Prevention, 1997), “The last time you had sex: Did you or your partner use a condom?” Response options for this item are either yes or no.

Sex-related resistance skills. A subscale of nine items from the Healthwise Survey (Caldwell, Smith, Wegner, et al., 2004; Palen, Smith, Flisher, Caldwell, & Mpofu, 2006) was used to assess sex-related resistance skills. Students responded to the question “What would you do if someone kept pushing you to have sex when you didn’t want to?” Students responded yes (1 point) or no (0 points) to all items, including “I would look at them directly and say no” and “I would say no but probably give in”. Because of the unique nature of this scale, a criterion was established that created two groups. The first group consisted of students who endorsed at least four or more sexual resistance skills. The second group consisted of students who endorsed three or fewer sexual resistance skills.

Sex-related knowledge. A subscale of eight items adapted from the Healthwise survey (Caldwell et al., 2004; Palen et al., 2006) provided data on sex-related knowledge (e.g., “Not having sex is the only 100% effective way to avoid pregnancy and sexually transmitted diseases STDs”). True responses equaled 1 point and false responses were given 0 points. The score for all seven items was summed to make a total score for sex-related knowledge. Higher scores on this subscale reflect a greater amount of sex-related knowledge. Reliability analysis indicated that the internal consistency of this scale was not adequate for further analysis.

Sex-related normative beliefs. The sex-related normative beliefs of students (e.g., “I believe it’s okay for people my age to not have sex”) was assessed using two items from the Healthwise Survey (Caldwell et al., 2004; Palen et al., 2006). Response options range from strongly agree to strongly disagree on a 4-point Likert scale. The scale was scored by taking the average of these two items. Lower scores indicated healthier sex-related normative beliefs. A Cronbach’s alpha of .56 was obtained for the two items used to assess this construct in the current sample.

Sex-related attitudes. A scale of five items from a past youth survey (ETR Associates & University of California at Berkeley, 1992) was used to assess the sex-related attitudes (e.g., “I can show love and affection for a boyfriend or girlfriend without having sex”). The four possible responses are on a Likert scale and range from strongly agree to strongly disagree. Scores for the items were averaged for each participant with lower scores reflecting more healthy sex-related attitudes. The Cronbach’s alpha for this scale was a .62 for the current study.

Positive Youth Development Indices

Indices of positive youth development in the current study included scales of the following constructs: the ego strength of competence, identity conflict resolution, and personal expressiveness.

The ego strength of competence. One subscale from the Psychological Inventory of Ego Strengths (PIES) developed by Markstrom and colleagues (1997) was used to assess student's self-perceptions of competence. The subscale contains eight items (e.g., "I have strengths that help me to be effective in certain situations"). Responses range from "very descriptive of me" (0-point response) to "not descriptive of me" (4-point response) on a Likert scale. Low scores on this scale indicated a greater level of perceived competence, which is associated with positive youth development. A Cronbach's alpha of .77 was demonstrated in past samples (Markstrom et al., 2002). For the current sample, a Cronbach's alpha of .66 was obtained.

Identity conflict resolution. One subscale from Erikson's Psychosocial Stage Inventory (EPSI; Rosenthal, Gurney, & Moore, 1981) was used to measure identity conflict resolution. The identity scale consists of 12 items (e.g., "I change my opinions of myself a lot") with items reflecting successful or unsuccessful resolution of the "identity verses role confusion" crisis of adolescence. Response options were on a 5-point Likert scale ranging from "almost always true" (4-point response) to "almost never true" (0-point response). Scores were averaged across all 12 items with high average scores reflecting better identity resolution.

Good internal consistency (Cronbach's alpha= .71) has been demonstrated in the past by Rosenthal and colleagues (1981); similar reliability was found with the current

sample (Cronbach's $\alpha=.72$). The wording of two items was adjusted to improve item clarity for this study's student survey. "I don't really know what I'm about" was changed to "I don't really know who I am" while "I find I have to keep up a front when I'm with people" became "I work to keep up a certain image when I'm around people".

Personal expressiveness. A six-item subscale was used to measure personal expressiveness (e.g., "When I do things to help someone, I feel more intensely involved than when I do most other activities"). Response options were on a 7-point Likert scale ranging from "strongly agree" (7-point response) to "strongly disagree" (1-point response). All items on the scale were averaged to obtain a mean score for each student with higher scores indicating more personal expressiveness. A Cronbach's α of .93 was calculated for the present sample.

Plan of Analysis

Several statistical techniques were used in order to test the proposed study hypotheses. First, four chi-square tests were conducted in order to examine the hypothesized association between group participation (e.g. TOP intervention versus comparison), teen parenthood status, condom use, and the endorsement of sex-related resistance skills. Second, two Multivariate Analysis of Variance (MANOVAs) were planned to be used in order to test the hypothesized group differences in: 1) sex-related beliefs and attitudes and 2) the ego strength of competence, identity conflict resolution, and personal expressiveness.

Results

Study hypotheses were tested with four chi-square tests. For these tests, intervention versus comparison group frequencies were compared on the following

categorical indices: recent pregnancy, lifetime pregnancy, recent condom use, and endorsement of sex-related resistance skills. The chi-square results for recent and lifetime pregnancy as well as endorsement of sex-related resistance skills were non-significant. A chi-square test for recent condom use was significant, $X^2(1, 43) = 13.64, p < .001$. Results showed a significant association between group (TOP versus comparison) and recent condom use. The pattern of cell frequencies indicated that recent condom use tended to be more frequently reported among TOP participants ($N_{TOP} = 11; N_{COMP} = 1$) relative to the Comparison Group. And that recent condom use tended to be less frequently reported among the Comparison Group ($N_{TOP} = 9; N_{COMP} = 22$) relative to TOP participants (See Table 1).

The plan of analysis called for two MANOVAs with the fixed factor for both analyses being Group (TOP versus Comparison Group). The first set of dependent variables consisted of two sexual related outcome scales (sex-related normative beliefs and sex-related attitudes) and the second set consisted of the three positive youth development scales (identity resolution, competence, and expressiveness).

In preparation for these analyses, normality checks and correlations were conducted for each of these sets of dependent variables. All scales were normally distributed with no skewness or kurtosis values greater than two. There was a significant positive correlation between sexual beliefs and sexual attitudes, $r = -.41, p < .01$. This correlation indicates that people with healthier sexual beliefs tend to have healthier sexual attitudes.

A significant negative correlation was found between perceived competence and identity conflict resolution, $r = -.71, p < .01$ (See Table 2). This correlation suggests that

Table 1

Recent Condom Use:

	The last time you had sex, did you or your partner use a condom?		Total
	YES	No	
TOP	11	9	20
Comparison	1	22	23
Total	12	31	43

people with lower levels of perceived competence tend to have poor identity conflict resolution skills. It is important to note that the competence scale is reverse coded, so that low mean scores equal more competence.

Due to low power and concerns about significant correlations between the sets of dependent variables, five Analysis of Variance (ANOVA) tests were conducted on the individual dependent variables. An alpha level of $p < .01$ or better was used in order to address Type 1 error inflation due to multiple ANOVA tests.

Nonsignificant results were found for all indices tested (e.g., normative sexual beliefs, sex-related attitudes, identity conflict resolution, competence, and personal expressiveness).

Discussion

The primary goal of this study was to examine the effectiveness of TOP. Several large scale studies have demonstrated that TOP is efficacious in decreasing teen problem behaviors including teen pregnancy and failure in school (Allen et al., 1990; Allen et al., 1997; Allen & Philliber, 2001). Although there were no significant intervention related benefits for lifetime or recent teen pregnancy, past research has demonstrated intervention benefits in these areas (Allen et al., 1997), even after controlling for demographic variables and teen pregnancy at program entry. The relatively small sample size in the current study may have contributed to the failure to obtain significant group differences on these important indices.

Positive intervention related benefits were found for recent condom use as expected with TOP participants tending to report recent condom use more frequently than the Comparison Group. This result is in line with the one past TOP study that assessed

Table 2

Correlations between Positive Youth Development Scales

	Competence	Identity	Expressiveness
Competence	-	-	-
Identity	-.707**	-	-
Expressiveness	-.249	.060	-

** $p < .01$

contraceptive use. Philliber and Allen (1992) found that TOP participation was significantly related to contraceptive use in one sample of high school students. However, the current study was designed only to examine condom use rather than contraceptive use as a whole.

The present study was truly an effectiveness trial in that program delivery was completely under the direction of school personnel. Although the results of this small scale pilot study were modest, the study results generally supported the effectiveness of TOP when implemented under the direction of school personnel. The results of more large scale effectiveness trials are needed to have greater confidence in this preliminary finding.

Another contribution of this work is that it looked at the effectiveness of TOP with an expanded array of outcome indices (e.g., the positive youth development variables). Past research on TOP has not investigated the developmental assets of the ego strength of competence and personal expressiveness in relation to TOP despite one of the aims of TOP being to increase teen's competence in making decisions (Allen & Philliber, 2001). Some non-significant yet encouraging trends were found for intervention related gains in healthier normative sexual beliefs, the ego strength of competence, and personal expressiveness. It is important to note that these are non-significant trends and a larger sample size would provide a better test of these possible benefits.

Future research is needed on the potential effects of TOP on these and other developmental assets. Specific tests of moderation of program benefits need to be developed in order to explain how these developmental assets may or may not mediate other intervention outcomes (e.g., condom use benefits). However, these tentative

findings suggest that future studies should include these outcome variables in other more large scale TOP effectiveness trials. Larger sample sizes and continued use of a wide array of developmental outcome variables are needed to specifically test how TOP may yield benefits for youth.

It is important to note that no conclusions about causation can be drawn due to the quasi-experimental cross-sectional comparison design used in the present study. Future research focused on the sexual and health-related outcomes of TOP should consider using longitudinal research designs where student's behaviors, attitudes, and other potential outcomes can be measured repeatedly over the course of TOP implementation. Other researchers have made similar suggestions in regards to future TOP research (Allen, Philliber, & Hoggson, 1990).

Another aspect of the current research design that is considered a possible limitation is the fact that students who participated in TOP were self-selected due to the voluntary nature of the program. Past outcomes for TOP have not been significantly different between studies that opted for random versus nonrandom assignment of program participants (Allen, Kuperminc, Philliber, & Herre, 1994); however, random assignment in future TOP trials has been recommended (Philliber & Allen, 1992) in order to strengthen validity.

The current TOP effectiveness trial was conducted at one urban high school in the Northeastern United States with predominantly African-American students; therefore, results may not generalize to all high school students. Furthermore, results cannot be generalized to students who engage in TOP at the middle school level. In addition to the potential influences of the location site and demographics of TOP participants in the

current program evaluation, school climate is another factor that could have influenced the current results. Although the affects of school climate were not analyzed in the present study, it is recommended that research on the effectiveness of TOP in the future consider the impact of school climate and other environmental factors.

Another possible limitation of the present TOP effectiveness trial is lack of knowledge about intervention dosage. The design of the current study did not include analysis of process data. TOP facilitators at the school site did complete student logs, but analysis of this documentation was not feasible for the current study, due to concerns about reducing the sample size even further. Upcoming investigations of TOP would benefit from inclusion of methods for ensuring and evaluating TOP's dosage.

In conclusion, the current study provided an independent effectiveness trial replication for TOP. No significant differences in teen pregnancy rates were found, however intervention related benefits were found for recent condom use. This study initiated investigation into several other areas of potential benefit, including sex-related resistance skills, normative sexual beliefs, sex-related attitudes, identity conflict resolution, the ego strength of competence, and personal expressiveness. Although results were not significant for these factors, possibly beneficial trends were noted and these indices should be included in future trials. Additional research is now needed to explore these and other developmental factors that may relate to the behavioral benefits associated with participation in TOP.

References

- Allen, J. P., Kuperminc, G., Philliber, S., & Herre, K. (1994). Programmatic prevention of adolescent problem behaviors: The role of autonomy, relatedness, and volunteer service in the teen outreach program. *American Journal of Community Psychology, 22*(5), 617-638.
- Allen, J. P., & Philliber, S. (2001). Who benefits most from a broadly targeted prevention program? Differential efficacy across populations in the teen outreach program. *Journal of Community Psychology, 29*(6), 637-655.
- Allen, J. P., Philliber, S., Herrling, S., & Kuperminc, G. P. (1997). Preventing teen pregnancy and academic failure: Experimental evaluation of a developmentally based approach. *Child Development, 64*(4), 729-742.
- Allen, J. P., Philliber, S., & Hoggson, N. (1990). School-based prevention of teen-age pregnancy and school dropout: Process evaluation of the national replication of the teen outreach program. *American Journal of Community Psychology, 18*(4), 505-524.
- Allen, J. P., Weissberg, R. P., Hawkins, J. A. (1989). The relation between values and social competence in early adolescence. *Developmental Psychology, 25* (3), 458-464.
- Bennett, S. E., & Assefi, N. P. (2005). School-based teenage pregnancy prevention programs: A systematic review of randomized controlled trials. *Journal of Adolescent Health, 36*, 72-81.
- Caldwell, L., Smith, E., Flisher, A., Wegner, L., Vergnani, T., Mathews, C. et al. (2004). Healthwise South Africa: Development of a life skills curriculum for young adults. *World Leisure, 3*, 4-17.

- Card, J. J. (1999). Teen pregnancy prevention: Do any programs work? *Annual Review of Public Health, 20*, 257-285.
- Carter, K. F., & Spear, H. J. (2002). Knowledge, attitudes, and behavior related to pregnancy in a rural teenage population. *Journal of Community Health Nursing, 19*(2), 65-75.
- Center for Disease Control (1997). Youth risk behavior surveillance Survey—United States, 1997. Retrieved 2/6/07 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/00054432.htm>
- Center for Disease Control (2004, May 21). Youth risk behavior surveillance-- United States, 2003. Retrieved 1/16/06 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5302a1.htm>
- Damon, W. (Ed.). (1998). *Handbook of child psychology* (5th ed.). New York: Wiley.
- Damon, W., & Gregory, A. (2003). Bringing in a new era in the field of youth development. In R.M. Lerner & P.L. Benson (Eds.), *Developmental assets and asset-building communities: Implications for research, policy, and practice* (pp. 47-64). Norwell, MA: Kluwer.
- ETR Associates & University of California at Berkeley (1992). Youth Survey. California Department of Health Services, Office of Family Planning.
- Ferrer-Wreder, L., Stattin, H., Lorente, C. C., Tubman, J. G., & Adamson, L. (2004). *Successful prevention and youth development programs: Across borders*. Kluwer Academic/Plenum Publishers: New York.
- Flanigan, C. (2001). What's behind the good news: The decline in teen pregnancy rates during the 1990s. Washington, DC: The National Campaign to Prevent Teen Pregnancy.
- Gottsegen, E., & Philliber, W. (2001). Impact of a sexual responsibility program on young males. *Adolescence, 36*(143), 427-433.

- Henshaw, S. K. (2004). Special report: U.S. teenage pregnancy statistics with comparative statistics for women 20-24. [Online]. Retrieved 02/10/2006 from http://www.agi-usa.org/pubs/teen_preg_sr_0699.html.
- Kirby, D. (2001) *Emerging answers: Research findings on programs to reduce teen pregnancy*. Washington, DC: National Campaign to Prevent Teen Pregnancy.
- Klein, J. D. and the Committee on Adolescence (2005). Adolescent pregnancy: Current trends and issues. *Pediatrics*, 116; 281-286.
- Lattimore, C. B., Mihalic, S. F., Brotpeter, J. K., Taggart, R. & Elliott, D. S. (1998). *Blueprints for violence prevention, Book four: The quantum opportunities program*. Boulder, Colorado: University of Colorado.
- Lerner, R. M. & Castellino, D. R. (2002). Contemporary developmental theory and adolescence: Developmental systems and applied developmental science. *Journal of Adolescent Health*, 31, 6, 122-135.
- Lerner, R.M., Dowling, E. M., & Anderson, R.M. (2003). Positive Youth Development: Thriving as the basis of personhood and civil society, *Applied Developmental Science*, 7, 3, 172-180.
- Markstrom, C. A., Sabino, V. M., & Turner, B. J. (1997). The psychosocial inventory of ego strengths: Development and validation of a new Eriksonian measure. *Journal of Youth and Adolescence*, 26 (6), 705-732.
- Maynard, R. (1996). *Kids having kids: Economic costs and social consequences of teen pregnancy*. Washington, DC: The Urban Institute.
- Moore, C. W., & Allen, J. P. (1996). The effects of volunteering on the young volunteer. *The Journal of Primary Prevention*, 17(2), 231-257.

- The National Campaign to Prevent Teen Pregnancy. (February 2002). *Not just another single issue: Teen pregnancy prevention's link to other critical social issues*. Retrieved October, 10, 2005, from <http://www.teenpregnancy.org/resources/data/pdf/notjust.pdf>
- O'Donnell, L., Stueve, A., San Doval, A., Duran, R., Haber, D., Atnafou, R., et al. (1999). The effectiveness of the reach for health community youth service learning program in reducing early and unprotected sex among urban middle school students. *American Journal of Public Health, 89*(2), 176-181.
- Palen, L., Smith, E., Flisher, A., Caldwell, L., & Mpofu, E. (2006). Substance use and sexual risk behavior among South African eighth grade students. *Journal of Adolescent Health, 39*, 761-763.
- Philliber, S., & Allen, J. P. (1992). Life options and community service: Teen outreach program. In B. C. Brent, & J. J. Card (Eds.), *Preventing adolescent pregnancy: Model programs and evaluations* (pp. 139-155). Thousand Oaks, CA: Sage Publications, Inc.
- Philliber Research Associates (n.d.). Teen outreach intake form. Retrieved October 13, 2006, from <http://www.wymancenter.org>
- Riessman, F. (1965). The helper-therapy principle. *Social Work, 10*, 27-32.
- Rosenthal, D. A., Gurney, & Moore, C. W. (1981). From trust to intimacy: A new inventory for examining Erikson's stages of psychosocial development. *Journal of Youth and Adolescence, 10* (6), 525-537.
- Rothenberg, A. & Weissman, A. (2002). The development of programs for pregnant and parenting teens. *Social Work in Health Care, 35*(3), 65-83.
- Staub, E. (1979). *Positive social behavior and morality: Volume 2. Socialization and development*. New York: Academic Press.