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Use of an Interactive Laserdisc Parent Training Program  
with Teenage Parents

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Child and Family Behavior Therapy, (1999), 21 (1), 19-37.

### Abstract

The purpose of this study was to investigate the effectiveness of a brief interactive laserdisc parent training program in instructing teenage parents. Previous research supported the effectiveness of this program with parents of adolescents and pre adolescents. Sixty two pregnant or parenting adolescents were assigned to either a control group or to parent training via the interactive laserdisc program plus group discussion. The group discussion was designed to instruct the parents in the appropriate application of the skills taught in the program to toddlers. Compared to the control group, the intervention group scored significantly higher at two month follow up on measures of parenting knowledge, belief in the effectiveness of adaptive parenting practices over coercive practices, and application of adaptive parenting skills to hypothetical problem situations. This study provides preliminary evidence that this program can be a useful tool in instructing teenage parents.

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In the 1960's, 90 % of babies born to teen mothers were placed for adoption, but by the 1980's 90 % of these children were being raised by their biological mothers (Vinovskis, 1981). In addition, according to Bolton, Laner, and Kane (1980), there has been a steady increase in the rate of teen pregnancy since around the end of World War II. By 1988, it was estimated that the rate of live births to teenage mothers was 54.9 per 1,000 female teenagers (National Center for Health Statistics, 1992). Because both teenage childbearing and childrearing are prevalent in our society, information on the consequences for both the teenage mother and her child is critical.

One reason for concern regarding this growing number of teenage parents is that it is commonly believed that teenage parents are more likely than older parents to abuse or neglect their children. In a review of the literature investigating young maternal age as a risk factor for maltreatment, Buchholz and Korn-Bursztyn (1993) conclude that there is no consensus as to whether maternal age alone places children of teen mothers at increased risk of abuse or neglect. The reason for this is that maternal age is confounded with many other risk factors such as low socioeconomic status, depression, and low social support.

Another area of concern is that children of teenage mothers may be more likely to face developmental problems. Whitman, Borkowski, Schellenbach, and Nath (1987) reported that physical problems, intellectual deficiencies, developmental delays, and behavioral problems are more common among children of adolescent mothers than children of older mothers. In addition, children born to adolescent mothers are in a high risk category for both mild and severe forms of mental retardation. In a similar study, Garcia-Coll, Hoffman, and Oh (1987) found that children of teen mothers are at greater risk for poorer intellectual status later in life. As with the literature on abuse, young maternal age does not seem to be the sole cause of this increased risk of developmental delay, but because young maternal age is often associated with other risk factors such as poverty, children of young mothers, as a group, tend to be at greater risk.

Risk factors found to be associated with teenage mothers more often than with older mothers include: low socioeconomic status and low educational level (Bolton et al., 1980; Reis & Herz, 1987; Zuravin, 1988), disturbed family life and diminished social support (Belsky, 1984; Bolton et al., 1980; Haskett et al., 1994), depression, stress and other personal characteristics such as self esteem (Buchholz & Korn-Bursztyn, 1993; McKenry, Kotch, and Browne, 1991), lack of knowledge of child development (Bavolek, Kline, McLaughlin, & Publicover, 1979; Buchholz and Korn-Bursztyn 1993; Shaner, Peterson & Roscoe, 1985; Whitman et al., 1987), belief in physical punishment (Bavolek et al., 1979; Garcia Coll, Hoffman, VanHouten, and Oh, 1987; Haskett et al., 1994; Reis & Herz, 1987) low quality of parent child interactions (Bavolek et al., 1979; Buchholz & Korn-Bursztyn, 1993; Garcia Coll, Hoffman, & Oh, 1987; Garcia Coll, Hoffman, VanHouten, and Oh, 1987; Jones, Green, and Krauss 1980; McAnarney, Lawrence, Ricciuti, Polley, and Szilagyi, 1986; Panzarine, 1988), lack of effective parenting skills (Buchholz and Korn-Bursztyn, 1993; Haskett et al., 1994; Panzarine, 1988; Whitman et al., 1987), less time spent in caregiving (Garcia Coll, Hoffman, VanHouten & Oh, 1987; Jones et al., 1980; Ragozin et al., 1982), and lack of confidence in the role of mother (Mercer, 1980; Williams, 1974).

A great number of researchers have investigated the effectiveness of intervention programs designed to reduce the risk of child maltreatment and developmental delay. Some of these programs were designed specifically for teenage parents while others were designed to serve the at-risk population in general. The common goal of these intervention programs is to reduce the risk of child maltreatment and developmental delay by modifying one or more of the risk factors listed previously. Evaluation of these programs is based on how well the target risk factors are modified by the program. Successful modification of risk factors implies that risk to the child has been reduced.

These programs range from very intensive, and costly, to very simple, inexpensive interventions. As an example of a very intensive intervention, Causby, Nixon, and Bright (1991) conducted a study of 11 teenage mothers enrolled in a specialized school that provided a

curriculum designed to meet the needs of adolescent mothers. In addition to basic education classes, and monthly home visits from social workers, these teenage mothers received education in providing a good home environment for their children, feeding lessons, and teaching lessons. Results showed that after a period of six months, the specialized curriculum was associated with significantly improved mother-child interactions, and increased involvement of the mother in care giving. At the other extreme, an example of a very simple, inexpensive intervention evaluated by Showers (1991) involved simply having teenage parents study index cards with information on child development and parenting. Results showed that the cards were effective in improving parenting knowledge on the topics specific to the cards. This is significant because poor knowledge of child development and parenting skills is a risk factor for child abuse or neglect, and developmental delay.

Many other interventions fall somewhere in between. For example, Koniak-Griffin, Verzemnieks, and Cahill (1992) used videotaped interactions of teenage mothers and their infants to provide these mothers with feedback and instruction on how to improve their interactions, and Kissman (1992) used weekly group meetings over the course of an academic year to teach teenage mothers child management skills including the importance of attending to and reinforcing desired behavior in children, relating to children without yelling or spanking, and using clear concise commands.

In designing intervention programs, an important goal is to maximize effectiveness while minimizing cost. Use of computer-assisted instruction may be a new and promising way to minimize cost of an instructional program while still maintaining effectiveness of instruction. A variety of types of computer-assisted programs have been shown to be effective methods of instruction in the fields of both education and psychology. In their review of the literature on the effectiveness of computer assisted instruction, Niemiec and Walberg (1987) found that computer-based instruction has been effective in increasing academic achievement in elementary, high school, and college students both in the United States and Japan, and in training adults

outside of a traditional school setting. In a meta-analysis of sixty-three studies investigating the effectiveness of interactive-video, computer-assisted programs, McNeil and Nelson (1991) concluded that interactive-video can be an effective form of instruction. Cohen (1984) states that because interactive programs require the learner to be actively involved in the instruction, it is difficult for the learner to not pay attention to the program.

The current study involved the use of an interactive videodisc program, Parenting Adolescents Wisely (PAW), which has been shown to be effective in reducing parent reports of child behavior problems and increasing parent knowledge of and practice of effective parenting skills (Segal, 1995). Segal also reported that parents who used the program were satisfied with the program overall and found the teaching format to be easy to follow. Subjects in this study were parents averaging 42 years in age who reported behavior problems with their children who averaged 13 years of age.

While as the name suggests, the PAW program was designed for parents of adolescents and pre-adolescents, many of the skills taught in the program have been shown in research on parenting advice booklets to be effective in dealing with problem behaviors such as tantrums, whining, interrupting, and noncompliance in children as young as 3 years of age (Endo, Sloane, Hawkes, & Jenson, 1991; Endo, Sloane, Hawkes, McLoughlin, & Jenson, 1991; Sloane, Endo, Hawkes, & Jenson, 1990, 1991). In addition, Kissman (1992) found that teaching these skills to teenage mothers, many of whom were parenting infants, (60% were under 6 months), led the young mothers to obtain scores on a parental attitudes scale that indicated that they were more "child centered" and less authoritarian than those who did not receive the parent training.

The purpose of the current study was to investigate the effectiveness of the PAW program in instructing teenage parents. The long term goal in using the PAW program with this population was to reduce the risk that teenage parents will abuse their children or that their children will suffer developmental delay. While these long term outcomes are not directly measured in this study, it was hypothesized that this risk would be reduced by modifying the following known risk

factors: (a) increasing teenage parents' knowledge of effective parenting skills; (b) increasing teenage parents belief in the effectiveness of adaptive parenting practices over coercive practices; and (c) increasing their ability to apply effective parenting skills to situations that they are likely to encounter with their young children. In addition, other variables were included on an exploratory basis to help guide future research involving the use of this and similar interventions with teenage parents. These variables included (a) frequency of spanking, (b) quality and (c) quantity of time spent with the children; (d) confidence in the role of parent; and (e) empathy with their children. All of the variables included in this study have been shown to be risk factors which tend to be characteristic of teenage parents, and are, therefore, worthwhile areas to serve as the focus of an intervention effort.

## Method

### Participants

Sixty two pregnant or parenting adolescents enrolled in an Ohio Department of Education sponsored program entitled Graduation, Reality, and Dual Role Skills (GRADS) at their high schools were recruited to participate in this study. The GRADS program is designed to educate adolescent parents in areas such as prenatal care, nutrition, and child care, as well as helping them to deal with the difficult issues involved in being adolescent parents, and to plan for their and their children's future. Subjects were drawn entirely from high schools in one county in southeastern Ohio. The great majority of subjects were female and white. Students' average age was 16.9 years, they averaged 11 years of education, 23 were pregnant with their first child or had a partner expecting her first child, and 39 already had at least one child. Of those students who were already parents, most had only one child, and the average age of the children of participants was 1.2 years. Most participants were single, were living with their parents, and reported a median family income of \$15,000 to \$20,000. In addition, the majority of participants had not taken any parenting class other than the GRADS program, and had not been in individual or family therapy.

Eight classes of GRADS students were randomly assigned to either the control (29 students) or experimental group (33 students). All students in each GRADS class were given the opportunity to participate in the study. In addition to the 62 students who participated as subjects in the evaluation of the parent training program, 13 students in one GRADS class were selected to participate in a pilot study. All participants, including the pilot participants, were offered a modest cash incentive (\$7.50) to participate in this study. Payment was made upon each participant's completion of the study.

### Intervention

The program used in this study, entitled Parenting Adolescents Wisely (PAW), is a computer assisted interactive videodisc program that was developed over a three year period by a team of faculty, staff, and graduate students in clinical child and family psychology, multimedia services, film, computer sciences and telecommunications at Ohio University. This program addresses communication skills, problem solving skills, speaking respectfully, assertive discipline, and reinforcement, all of which can be effectively used with toddlers. The program instructs parents in effective parenting skills through the use of demonstration, quizzing, repetition, rehearsal, recognition, and feedback for correct and incorrect answers. The parent controls the pace of the program, and parents' responses determine subsequent content.

The nine problem situations that are portrayed in the video portion of the program are: children not doing chores, not completing chores satisfactorily, not complying with parental requests to get off the telephone or turn down the volume of music, not completing homework, sibling aggression, associating with peers that parents fear will be a bad influence, and speaking disrespectfully. While many of the specific scenarios presented in this program are not going to be faced by these young mothers for a number of years, the skills taught through these scenarios, such as "I statements", stating desired behavior clearly, providing consistent consequences, using praise to reinforce desired behavior, and understanding innocent intentions behind misbehavior, can be used effectively with toddlers.

After the video presentation of each problem, the program asks the parent to choose one of several solutions to the problem, only one of which is an effective and adaptive method of dealing with the problem. After choosing a solution, the parent sees the solution they chose acted out in the video. The parent then receives feedback through an on-screen question-and-answer format that explains any problems associated with the selected solution as well as why the common mistakes in parenting portrayed in the incorrect solutions lead to difficulties. If the correct solution is chosen, the parent receives feedback on the specific skills utilized in that solution that made it effective. A number of review questions follow the feedback received after the correct solution is viewed to further reinforce the skills that were presented in the feedback. After completing the review questions, the parent then moves to the next problem.

Parents using the program also receive a workbook, to keep for future reference, that outlines all of the problems and solutions included in the program and contains the critiques of each solution, the review questions, and skill practice exercises (Gordon, Gylys, & Segal, 1996). In addition, the students participating in this study were engaged in group discussion about how to apply the parenting skills taught in this program to young children, and about appropriate expectations for young children's behavior. The first author, a pre-masters graduate student in child and family clinical psychology, led all discussions.

### Measures

Demographics form. The demographics form consisted of standard demographics questions such as date of birth, marital status, sex, race, years of education, and family income, and also included questions specific to this population including age of child or children, trimester in pregnancy, and participation in parenting classes and counseling.

Parenting Knowledge Test. The Parenting Knowledge Test consisted of 34 multiple choice questions designed to measure knowledge of parenting skills that are presented in the parent training program used as the intervention in this study. A pilot study was conducted with 23 college students to test if the Parenting Knowledge Test can discriminate between individuals

who have been taught the skills presented in the PAW program and those who have not. A group that was given the PAW workbook to study before taking the test scored significantly higher ( $x=30$ ) than those who did not have the opportunity to study the workbook ( $x=23$ );  $t(47)=3.63$ ,  $p<.001$  (Segal, 1995). Significant pre-post increases in scores following parental use of the PAW program have been found in three studies (Hupertz, 1995; Kacir, 1997; Segal, 1995).

Parental Attitudes Questionnaire. The Parental Attitudes Questionnaire consisted of 17 items with a seven-point rating scale response format. These items were designed to assess parental belief in the value of adaptive parenting practices over coercive practices. Internal consistency, based on the data collected in this study, was calculated to be .65 (Cronbach's alpha).

Supplementary Questionnaire. In addition to the above questionnaires, subjects were asked to respond to questions designed to assess their confidence in the role of parent, the quality and quantity of time they spend with their children, and the frequency of spanking their children, and their empathy with children subjected to coercive parenting. All of these items, except for the items assessing empathy, were designed with a rating scale response format.

The questions designed to assess empathy were open ended and responses were coded based on degree of empathy with the coerced child. An interrater reliability of .85 (Cohen's kappa) was obtained for this measure.

Two month test-retest reliability, based on control subject data was calculated to be .31 for the quality of time spent with their children, .59 for the quantity of time spent with their children, .84 for spanking frequency and .65 for the empathy questions. Internal consistency, calculated based on this study's data, was determined to be .69 for the confidence questions (Cronbach's alpha). Internal consistency was not calculated for the other components of the supplementary questionnaire because each consisted of only one or two items.

Scenarios. Subjects were presented with four scenarios that they will be likely to encounter, or have already encountered, with their toddlers. Subjects were asked to write a description of

how they would most likely act in each situation. Responses were coded based on the use of effective parenting skills and the coerciveness of the response. For example, when given a situation where a 2 year old colors with crayon on the wall for the first time, a response such as "spank the child and take away the crayons for a month" receives a 1 (poor), while a response that involves verbally correcting and redirecting the child by giving him or her some paper would receive a 5 (highest mark). An interrater reliability of .86 (Cohen's kappa) was obtained for this measure. Internal consistency, based on the data from this study, was calculated to be .54 (Cronbach's alpha).

### Procedures

Informed consent was obtained from the parents of all participants who were not over 18 or legally classified as emancipated minors. Participants who were over 18 or classified as emancipated minors provided informed consent for themselves. In addition, subjects who were minors were asked to sign assent forms to indicate their willingness to participate in the study.

Pilot study. Students who participated in the pilot study participated in the intervention program as a group during two of their weekly GRADS meetings. During the week following their participation in the intervention program, students were asked to complete the measures to be used in the study to determine if the items were understandable to the population that would be participating in this study. Several items that seemed unclear to the pilot subjects were modified. In addition because some students' limited reading abilities prevented them from accurately completing the measures, it was decided that the measures would need to be read aloud to students participating in the intervention study.

Pilot participants were also asked to fill out a supplementary form consisting of open ended questions that was designed to serve as a manipulation check, and to determine what aspects of the program the students found helpful, and what aspects were not helpful. The manipulation check indicated that students did pay attention to the program, with all being able to recall several problems faced by the parents in the program and techniques that were effective and not

effective in solving these problems. In addition, all reported that at least part of the program was enjoyable and helpful.

Pilot participants were also engaged in discussion about problems that they face with their young children. The purpose of this discussion was to identify areas of concern for these young parents of young children so that these specific problem areas could be addressed in the discussion component of the intervention to aid students in applying the skills presented in the program to their young children. The pilot study was conducted one month before the intervention study began.

Intervention study. The 8 classes (62 students) who did not participate in the pilot study were randomly assigned to either the intervention or control group. Due to differences in class size, the number of students in the two groups was not equal (33 in intervention group, 29 in control group) All subjects were asked to complete the demographics form, the Parenting Knowledge Test, the Parental Attitudes Questionnaire, the supplementary questionnaire, and the scenarios. These measures were administered to the students as a group in their classrooms in a pencil-and-paper format with the measures being read aloud by the students' teachers.

Beginning one week after these measures were completed, students in the intervention group participated in the intervention program as a group with average group size of 8 (range 4 to 15) during 2 consecutive weekly GRADS classes each lasting 2 hours. To help preserve the interactive quality of the program, all students were encouraged to participate in choosing solutions, and answering questions. When students disagreed on the correct solution to a problem, all the solutions guessed by students were viewed even if only one student wanted to see a particular solution to a problem. Students were also provided with the workbook which they were allowed to keep as a reference. Because some students were absent from one or part of one session, the average number of problems viewed by students in the intervention group was 7.2 of the 9 problem situations.

To help ensure that students would successfully generalize the skills taught in the program to their toddlers, group use of the program was led by the experimenter who gave the students examples of how these skills could be used with younger children, stressed appropriate expectations for the behavior of young children, and encouraged discussion of the problems and parenting practices illustrated in the program. Because students were eager to discuss problems that they had encountered with their children and problems that they anticipated having to deal with in the future, encouraging participation was not a problem. The content of the experimenter's supplemental discussion information was held constant for all classes. Segal (1995) reported that parents took an average of 2.5 hours to complete this program; classes in this study took 4 hours to complete the program. The discussion component, therefore, added approximately 1.5 hours to the length of the program.

Approximately 8 weeks after the students in the intervention group had participated in the program, the students in both the control and intervention groups were asked to complete the same measures that they completed earlier. These measures were again administered to the students as a group in their classroom, using a pencil and paper format with the measures again being read aloud by the students' teachers. Due to withdrawal from school, extended illness, or pregnancy complications which led to the need for home schooling, four students in the intervention group and six students in the control group failed to complete post measures. After these post-intervention data were collected, the students in the control group were given the opportunity to participate in the intervention program.

## Results

### Comparison of demographic variables

A chi-square analysis was performed on the categorical demographic data and t-tests were performed on the continuous demographic data to determine if the control and intervention groups differed significantly on any of these variables at pretest. There were no significant differences between the groups on the categorical variables. Comparisons of the continuous

demographic variables indicate that the groups differed only on the subject's age; the subjects in the control group were older than those in the intervention group (control  $x=17.2$ , intervention group  $x=16.6$ ;  $p=.02$ ). Because of this, the groups were determined to be roughly equivalent at pre-test, so that no reassignment of students was necessary.

Of the original 62 subjects, 10 were not included in the final analyses because they failed to complete posttest measures (4 intervention group, 6 control group). In addition, the two males who completed posttest measures (1 intervention group, 1 control group) were removed from the analyses. Therefore, 50 subjects were included in the final analyses (28 intervention group, 22 control group). The demographic analyses were repeated for these subjects to ensure that the drop-outs did not interfere with the original equivalence of these groups. These data are summarized in Tables 1 and 2.

#### Analysis of measures of knowledge, belief, and application of adaptive parenting skills.

To test the hypothesis that students in the experimental group would obtain scores on post-intervention measures which indicate significantly better knowledge of and ability to apply adaptive parenting skills to hypothetical situations; greater belief in the effectiveness of adaptive parenting practices over coercive practices than students in the control group, a 2 (Treatment: intervention, control)  $\times$  2 (Time: pre-intervention, post-intervention) repeated measures MANOVA was performed on the three dependent measures: (a) Parenting Knowledge Test, (b) Parental Attitudes Questionnaire, and (c) the scenario measure, which reflects students' ability to apply adaptive parenting skills to hypothetical situations. Diagnostic tests revealed no violations of the assumptions of MANOVA including homogeneity of variance-covariance matrices (Box's M), linearity, and normality. In addition, no problems with multicollinearity or outliers were detected. Unequal cell size was adjusted for using the SPSS METHOD= UNIQUE adjustment.

The Treatment  $\times$  Time interaction was found to be significant [ $F(3, 46)=14.23$ ,  $p<.001$ ]. Univariate F-tests, using a Bonferroni correction for multiple comparisons, revealed that all three dependent variables contributed to the significant interaction (Table 3). These results indicate

that participants in the intervention group increased their knowledge of adaptive parenting skills, and their belief in the effectiveness of adaptive parenting practices over coercive ones as compared to control subjects.

The significance of the interaction for the scenario measure is more difficult to interpret. The interaction appears to be a result of a modest, non-significant, increase in the ability of intervention group subjects to apply adaptive skills over coercive skills to hypothetical situations [ $t(27)=1.58$ ;  $p> .05$ ], and a modest, non-significant decrease in control subjects' ability to perform this same task [ $t(21)=1.74$ ;  $p> .05$ ].

#### Analysis of exploratory variables

Repeated measures ANOVAs were performed on the five exploratory variables: (a) frequency of spanking, (b) quality of time spent with child, (c) quantity of time spent with child, (d) confidence in role of parent, and (e) empathy with a child subjected to coercive parenting. Because subjects who did not already have children were not asked to answer questions regarding frequency of spanking, and quality and quantity of time spent with their children, these subjects were not included in the analyses for these variables, but were included in the analysis of the empathy and confidence variables. No significant effects were found for any of these variables.

### Discussion

The purpose of this study was to determine if the Parenting Adolescents Wisely program, when supplemented by group discussion, could be used to teach parenting skills to teenage parents. The results of this study provide evidence that this program can be an effective tool in increasing teenage parents knowledge of effective parenting practices, and increasing their belief that adaptive parenting practices are more effective than coercive practices. In addition, because these changes were measured approximately 8 weeks after completion of the intervention, there is also some evidence for retention of the information learned from the program.

These results also suggest that this program may modestly increase teenage parents' ability to apply adaptive parenting skills to situations that they are likely to encounter with young children, and may also prevent a modest decrease in their application of these skills to hypothetical situations. This modest decrease observed in the control group may reflect that as the children of these students grew from an average of 10.8 months old to 12.8 months old, the parents began to encounter more problems with their children, and began to become more frustrated with their lack of ability to deal with these problems. As a result, they may have begun to feel that more coercive parenting practices were necessary to control their children's behavior, and therefore, applied more coercive and less adaptive skills to the hypothetical situations. This explanation is supported by Panzarine (1988) who found that as children of teenage parents become older and more independent, the young parents often find that they do not have sufficient skills to deal effectively with their children, and as a result, parent-child interactions become more stressful. Future research needs to examine this variable more closely. Adding behavioral measures would help to determine if there is an actual increase in child behavior problems and an associated decrease in teenage parents' ability to apply adaptive skills to these problems that would explain the decrease over time on this scenario measure.

Because none of the exploratory variables revealed a significant effect for the Treatment by Time interaction, future research should not use these particular measures as outcome measures for evaluating this program. Because all of the measures for the exploratory variables were developed specifically for this study, and included only 1 to 4 items each, it is possible that more psychometrically sound measures of the constructs represented by these measures would produce significant results.

Several limitations of this study should be noted. First, both the Parental Attitudes Questionnaire and the scenario questions were designed specifically for this study, and the Parenting Knowledge Test was designed specifically for studies of the Parenting Adolescents Wisely program. Although these measures meet the requirement of face validity, and the

Parenting Knowledge Test and Parental Attitudes Questionnaire show moderate reliability, future studies need to further establish their psychometric properties. The relatively low inter item reliability of the scenarios measure may indicate that more items need to be added to this short four item measure.

Second, this study did not include a measure of behavior change. This study provides evidence that teenage parents completing this program increase their knowledge of and belief in these adaptive parenting skills, and may increase, or at least stabilize their ability to apply these skills. We have no evidence, however, that parents who already have toddler-age children are actually using these skills with their children or that parents who are currently expecting their first child or who are parenting an infant will use these skills with their children in the future. Future research could focus solely on teenage parents who already have toddler age children and include behavioral measures, or could include a long term follow up with behavioral measures to determine if parents begin to use these skills as their children enter their toddler years.

A third limitation of this study was that all subjects were recruited from a single, primarily caucasian county in rural southeastern Ohio. Whether findings from this study will generalize to teenage parents living in more urban areas, or to teenage parents from minority groups is unknown.

Because there were so few males participating in the study, they had to be excluded from the analysis, and therefore, it is unknown if these findings will generalize to teenage fathers. Future studies should attempt to include a larger group of fathers so that it will be possible to test for a gender effect of the intervention.

A final limitation was that random assignment of individuals was not possible, although classes were randomly assigned. The problem of using intact groups of subjects may have affected the results of this study. It is possible that these GRADS classes differed from each other as groups. This problem was reduced, but not eliminated because there were four GRADS

classes in each group rather than one class serving as the entire intervention group and one class serving as the entire control group.

In summary, this study provides evidence that the Parenting Adolescents Wisely program can be a useful tool in teaching parenting skills to teenage parents. The areas in which the parents improved are areas that have been identified as risks for child abuse or neglect and developmental delay. It cannot be concluded from this study, however, that use of this program will lead to a decrease in child maltreatment and developmental delay. To answer this question, future research should include a long-term follow up to determine if this intervention actually produces a reduction in the rate of child maltreatment and developmental delay.

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This research was supported by grants to the second author from the Governor's Office of Criminal Justice Services (#95JJN40616) and from the Ohio University Baker Fund. The authors wish to thank Judy Ferguson, Linda Meyers, Joan Reed and Jan Wolfe for their assistance with this project.

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Table 1

Categorical Demographic Variables by Groups: N's and Chi Square Values.

Demographic Variables	Intervention Group	Control Group	Chi Square Value
<u>Race</u>			
White	24	20	.29 (NS)
Black	4	2	
<u>Marital Status</u>			
Married	4	3	.01 (NS)
Single	24	19	
<u>Living Situation</u>			
Lives with parents	17	15	.29 (NS)
Does not live with parents	11	7	
<u>Family Income (annual)</u>			
Less than \$10,000	9	7	.10 (NS)
\$10,000 to \$25,000	13	11	
Over \$25,000	6	4	
<u>Parental Status</u>			
Has at least 1 child	20	10	3.46 (NS)
Expecting first child	8	12	
<u>Attended Parenting Class</u>			
yes	5	6	.65 (NS)
no	23	16	
<u>Present or Recent Therapy</u>			
yes	5	5	.18 (NS)
no	23	17	

Note. NS = Not significant. Significance set at  $p < .05$ .

Table 2

Descriptive Statistics and p Values on Continuous Demographic Variables

Demographic Variables	Intervention Group		Control Group		T-test
	Mean	SD	Mean	SD	
Years education	10.9	1.2	11.2	1.1	p = .27 (NS)
Subject's age	16.6	1.3	17.3	.8	p = .03 (Sig)
Family size	4.1	1.6	4.0	2.1	p = .83 (NS)
Month in pregnancy	3.2	1.3	4.0	1.7	p = .27 (NS)
Age of child	1.4	1.2	.8	.7	p = .15 (NS)

Note. NS = Not Significant, Sig = Significant Significance set at  $p < .05$

Table 3

Descriptive Statistics, F Values, and Effect Sizes for Treatment x Time Interaction

Variable	<u>Intervention</u>		<u>Control</u>		F	Effect Size
	M	SD	M	SD		
Parenting Knowledge					23.48***	1.38
Pretest	14.57	4.84	15.14	5.63		
Posttest	20.11	4.37	15.23	5.82		
Scenarios					5.57*	0.67
Pretest	14.18	3.82	15.06	3.05		
Posttest	15.18	3.32	13.47	2.95		
Parental Attitudes					7.98**	0.80
Pretest	89.25	10.22	90.32	9.58		
Posttest	93.95	9.33	88.89	10.69		

Note. Higher scores on all measures reflect more adaptive parenting knowledge, beliefs or application of adaptive practices.

\* Significant at  $p < .03$

\*\* Significant at  $p < .01$

\*\*\* Significant at  $p < .001$