

RESEARCH ARTICLE

Family Homework and School-Based Sex Education: Delaying Early Adolescents' Sexual Behavior

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ABSTRACT

BACKGROUND: Early sexual activity can undermine adolescents' future school success and health outcomes. The purpose of this study was to assess the role of a family homework component of a comprehensive sex education intervention in delaying sexual initiation for early adolescents and to explore what social and contextual factors prevent adolescents from completing these family homework activities.

METHODS: This mixed methods study included 6th- and 7th-grade survey responses from 706 students at 11 middle school schools receiving a sex education intervention, as well as interviews from a subset of 33, 7th-grade students from the larger sample.

RESULTS: Adolescents who completed more family homework assignments were less likely to have vaginal intercourse in 7th grade than those who completed fewer assignments, after controlling for self-reports of having had vaginal intercourse in 6th grade and demographic variables. Participants' explanations for not completing assignments included personal, curriculum, and family-based reasons.

CONCLUSIONS: Family homework activities designed to increase family communication about sexual issues can delay sex among early adolescents and contribute to school-based sex education programs. Successful sex education programs must identify and address barriers to family homework completion.

Keywords: homework; middle school; sex education.

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Early sexual debut in adolescence increases the risks for negative health and educational outcomes, such as sexually transmitted infections,^{1,2} teen pregnancy,³ and school dropout.^{4,5} Awareness of these potential consequences has driven educational and community efforts to delay adolescent sexual initiation.⁶ There is research that supports the positive impact of family communication about sexual issues on reducing adolescent sexual risk-taking behavior,^{7,8} although reviews show mixed findings for

its effectiveness.^{9,10} Parents' lack of knowledge, skills, and confidence to talk with their teens about sex may help explain these inconsistent findings,¹¹ and why less than half of adolescents and parents report talking with one another about sex and birth control.^{12,13} Thus, it appears that school-based family assignments for sex education have the potential to address these concerns by: (1) providing a clear context (homework assignment) in which to initiate conversation about sex and relationships, and (2) supporting parents with

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information and strategies to talk with their children about sexual issues.

Many sex education programs have developed family components in an effort to increase the frequency and effectiveness of such communications in supporting healthy sexual knowledge, attitudes, and behaviors. Interventions attempt to do this by providing both a context (eg, a school assignment) in which to raise sexual issues as well as information and resources, such as written or on-line factual materials, to guide such conversations.¹⁴ Findings are again mixed as to whether sex education programs that target family communication can help to support adolescent health-related attitudes and behaviors.¹⁵ Whereas some programs that have focused on parent-teen communication show encouraging results for delaying teen sex,^{16,17} there are few evaluations of school-based sex education programs that include a family component. It's Your Game: Keep It Real is one such program which includes 6 family homework activities, and evaluation findings show delays of sex, particularly for girls. However, the impact of the homework component of this program has not been specifically evaluated.¹⁸ The program Building Futures for Youth also included family homework assignments, although their number was not specified in its evaluation.¹⁹ No behavioral effects were found for this intervention, and the evaluators note that a parent workshop component of the program was not included in the evaluation due to poor attendance, a common problem in sex education programs that include family activities.¹⁴

School-based sex education programs have had more success reaching out to families than any other type of program due to their direct access to students and their parents.¹⁴ Even then, many students (and their parents) do not complete family assignments (used interchangeably here with "family homework"). For example, one evaluation of a middle school sex education curriculum found that 51% of students completed at least 3 out of 5 assignments.²⁰ Although reports of students' engagement are encouraging, this study's findings show that up to 49% of students did *not* participate in assigned family activities. Therefore, it is important to explore the barriers that keep teens from engaging in these critical conversations. The present study uses a mixed-methods approach to investigate the effectiveness of family homework assignments in delaying early adolescents' sexual behavior through a middle school-based sex education program and to explore what gets in the way of students' completion of these assignments.

Get Real: Comprehensive Sex Education That Works is a 3-year program that is designed to provide accurate, culturally sensitive, and age-appropriate

information related to sexual health and relationships. It is delivered with 9 lessons per year for grades 6, 7, and 8, and shows preliminary effectiveness in delaying 6th graders' sexual activity.²¹ The program's goals include enhancing relationship and communication skills, delaying sexual initiation, and promoting correct and consistent use of protection methods. The Get Real curriculum's theory of change applies cultural-ecological perspectives^{22,23} to understanding adolescent sexual behavior. It also incorporates elements from the Theory of Planned Behavior,^{24,25} which proposes that teaching positive attitudes toward delaying sex and promoting self-efficacy in sexual communication will support students' intentions to delay sex. Students' sexual development is embedded within multiple ecological contexts,²² which include their immediate contexts of peer and romantic relationships, school, and family role models and connections. This model of change emphasizes relationship skills and communication to translate intentions into healthy sexual behavior (in this case, delay of sex). The focus on building strong relationships and communication and recognition of influence of many contexts drives the inclusion of family homework activities in the curriculum.

The program recognizes parents and other trusted caregivers as the primary sexuality educators of their students and therefore includes family homework activities as a core component. Family homework activities are intended to support communication between parents and teens about family beliefs and values, with the ultimate goal of increasing adolescents' healthy sexual behavior. Accompanying parent resources include information about students' sex education lessons, definitions of terminology used, a "tips for parents" sheet, as well as websites and other resources such as books. The content of homework activities draws from research linking parent/teen conversations about values to delaying sex among their adolescent offspring.^{7,8}

The 8 homework activities assigned in the 6th grade are designed to get teens and trusted adults talking about topics that touch on sex, more indirectly in the initial lessons and more directly toward the end of the 6th-grade year. They include the following: brainstorming how to react in different situations, such as when noticing changes in one's body and coping with bullying; acting out scenarios in which the parent switches roles with the child; discussing healthy and unhealthy relationships from a jointly watched TV show; connecting male and female anatomy terms and their definitions; interviewing a parent or older adult about what it was like to be a teen; making lists for why people abstain from or decide to have sex; discussing the positive and negative consequences of a personal decision.

The first goal of this study was to assess the impact of completion of assigned family activities on sexual behavior among early adolescents receiving comprehensive sex education. The second goal was to explore possible barriers that prevent students from participating in these family activities, incorporating students' perspectives to better understand their challenges in discussing sexual issues with their families. This mixed-methods study addresses 2 research questions: (1) Do students who completed more family homework assignments for their 6th-grade sex education class report less initiation of sex in 7th grade, controlling for students' 6th-grade level of sexual activity, student sex, age, parental education, and family structure, than students who completed fewer assignments? and (2) What interferes with students' completion of family homework assignments for their 6th-grade sex education class?

METHODS

Two types of data were collected to answer the research questions: (1) survey data completed in 6th and 7th grade, and (2) individual interviews with a subset of 7th-grade students.

Survey Data

Procedure. The quantitative sample was part of a 4-year evaluation of a comprehensive middle school sex education curriculum that followed a cohort of students from 6th to 9th grade. For inclusion in the study, schools had to be within 25-miles of Boston, include 6th, 7th, and 8th grades, and have between 2 and 10, 6th-grade classrooms. We contacted administrators from approximately 140 middle schools who met these criteria to invite them to participate. Twenty-four schools in eastern Massachusetts agreed to participate in the evaluation and were randomly assigned to intervention and control conditions. Sixth graders in the 12 intervention schools received the Get Real curriculum, while 6th graders in the 12 control schools continued sex education as taught in their schools at that time. As the goal of this study was to investigate the effectiveness of family homework completion, data only from the intervention schools were included in the analyses. Data for both intervention and control groups were collected in 2 waves, due to the extended timeframe for recruitment of the 24 participating schools. Baseline data (start of 6th grade) from the first 3 intervention schools were collected in fall 2008, with 7th-grade follow-up data collected in fall 2009. In the 9 remaining schools, pre-test data were collected 1 year later, beginning fall 2009 and completed in fall 2010.

Parental consent was obtained prior to survey administration; only 1.2% of parents withheld their

consent. Students who did not have parental consent or refused assent (12 in 6th grade and 16 in 7th grade) were given supervised time outside of class while the survey was being administered. The paper-and-pencil survey took approximately 45 minutes to complete. Evaluation team members described the study and were on hand to answer questions and collect the completed surveys. Students' names were replaced by a unique bar code number, used to link their surveys over the course of the longitudinal evaluation. Identifying information was kept in a locked cabinet, separate from survey responses.

Participants. The baseline survey was administered to 980 students (89% of the 1098 registered at intervention schools). Of the 12 intervention schools, one was excluded from these analyses due to withdrawal from the evaluation study before 7th-grade data were collected. Students from the one school that was excluded from the analyses were older ($t = 2.46$, $p = .05$) and more likely to be Latino (chi square = 51.93, $p = .001$) compared to students included in the analysis. The remaining sample size after these exclusions was 890 students. Of these 890 students, 706 (79%) completed a follow-up survey and were included in the current analyses. Missing data in 6th or 7th grade was largely due to student absences, with few parents (26) or students (5) opting out of the evaluation. Students who were new to the intervention in 7th grade and had no 6th-grade baseline data were also not included in these analyses.

Instruments.

Sexual behavior. Students were asked "Have you had sex?" and were provided a definition of sex that stated "Having sex means when a boy puts his penis inside a girl's vagina. Some people call this 'making love' or 'doing it.'" Responses were "yes/no."

Family homework completion. Students were asked to return each family homework assignment with a parent/trusted adult's signature, to show they completed the activity. Students' homework participation score was calculated out of 8 possible assignments, and assessed as a dosage indicator. Students who completed no homework assignments were given a "0" for their participation score.

Data analysis. A multiple logistic regression analysis was conducted to determine if homework completion influenced the sexual behavior outcome variable after controlling for student sex, student age, parental education, 2-parent family, and 6th-grade level of sexual activity. Being male, older age, and lower economic background are known risk factors for being sexually active, whereas living with 2 parents is an identified protective factor.²⁶ Adjusted odds ratios and 95% confidence intervals were used to assess significance. All analyses were clustered by classroom to adjust for inflated intraclass correlations. Analyses were conducted in the Mplus platform and missing

data was estimated using FIML, a well-established approach for estimating missing questionnaire data.²⁷

Individual Interviews

Procedure. We recruited a convenience sample of 7th-grade students for qualitative interviews from 3 intervention schools in the larger evaluation study that taught Get Real in spring 2011. Active parent consent was required for interview participation. Each school determined how invitations and consent forms to participate in the study were distributed. In one school, students were given consent forms during their Get Real class, in a second school forms were distributed by a school staff member, and in a third school forms were sent home through a school mailing. Overall, 177 students were invited to participate in interviews. Thirty-eight consent forms were returned. Four parents returned forms which did not give consent for student participation. All students with parent consent were contacted for an interview; 94% of those (32 students) gave their assent and completed interviews. We were unable to reach 2 students to complete their interviews. Interviews took approximately 30 minutes and were conducted either at school or over the phone.

Participants and instruments. Interview questions addressed students' communication with adult family members about sex and relationships and explored their engagement (or lack thereof) with family homework assignments.

Data analysis. Using grounded theory procedures outlined by Strauss and Corbin,²⁸ transcribed interviews were closely read by 2 of the authors for overarching themes. The authors then met to discuss identified themes and to resolve discrepancies in initial thematic coding. Once a theme was provisionally defined and agreed upon, additional examples were sought in subsequent readings of other transcripts. We developed a codebook that listed the types and properties of the themes and sub-themes that emerged. Only the most common themes were retained in the analysis. The authors met regularly to develop new codes, refine existing codes, and collapse coding categories. Examples of themes and sub-themes were generated to make sure that the authors had a shared understanding of each theme and to ensure complete coverage of each thematic area. Coding differences were resolved through discussion and consensus.²⁹ NVivo version 8 (QSR International, Doncaster, Australia) was used for this analysis.

RESULTS

Survey

At baseline the sample was 54% female. Mean age was 11.83 years (SD = 0.60) in 6th grade and

Table 1. Logistic Regression Predicting to Had Sex

Predictor	AOR (95% CI)
Had sex 6th grade	3.21** (7.61, 18.02)
Latino ethnicity	0.88 (0.39, 1.78)
Sex (0 = female)	2.99* (1.39, 6.42)
Age	1.57* (1.00, 2.48)
Parent education	0.76 (0.55, 1.06)
Family structure (0 = 2 parent family)	2.76** (1.43, 5.34)
Homework	0.90* (0.81, 1.00)

*p ≤ .05, ** = p ≤ .01.

CI, confidence interval; AOR, adjusted odds ratio.

12.77 years (SD = 0.55) in 7th grade. Parental education was 3.37 (SD = 1.23) on the education scale, which represents more than high school, but not a completed bachelor's degree. More than half the sample (58%) reported living in a 2-parent family in the same home, 42% some other type of family structure such as single parent or 2 parents in different homes. The sample was 32% White, 30% Black, 29% Latino, 4% Asian, and 5% Biracial.

In 7th grade, 9% of participants reported that they had had sex. Approximately half of students (51%) completed at least 4 of the 8 homework assignments with 25% completing none. Control variables of having had sex at baseline, gender, age, and living in a 2-parent family also significantly predicted having had sex at follow-up. After accounting for control variables, a greater number of homework assignments was protective for sexual initiation in the 7th grade (p = .05, OR = .90, 95% CI = 0.81-1.00) (Table 1).

Interviews

The mean age for the 33 students interviewed (19 boys, 14 girls) was 12.88 years (SD = 0.53). Parental education was 2.81 (SD = 1.14) on the education scale, which represents finishing high school, but not yet starting college. Thirty-six percent of those indicating family structure reported a two-parent family. The sample was 18% White, 37% Black, 33% Latino, 9% Biracial, and 3% American Indian. Nine percent of interview participants reported that they had had sex in 7th grade. Over half of students (66%) completed at least 4 out of 8 possible homework assignments with 7% completing no homework assignments.

Students were asked about their reasons for not completing some or all of the family activities. The most frequently cited reason pertained to adolescents' *personal* reasons (55%) followed by *curriculum-based* (24%) and *family-based* (21%) reasons (Table 2). The most common *Personal* reasons for not completing family activities referred to (1) feeling awkward or embarrassed about assignments, eg, "Well, with my mom, I kind of felt embarrassed but it was like, I wanted to rush, like hurry up, so I didn't have to talk about it. With my dad, I *really* was embarrassed,"

Table 2. Reasons Why Students Did Not Always Complete Assignments (> 1 Code Possible)

	N	Theme (%)	Overall (%)
<i>Personal reasons</i>			
Felt awkward/embarrassed/afraid of parent's reaction	13	29	16
Not interested in topic/not important/not in the mood/ forgot about it	9	20	11
Purposefully limits family interaction, eg, does not bring assignments to parents at all	9	20	11
Student too busy, eg, not as important as other areas of their life/other homework	7	16	9
Gendered expectations/comfort level, eg, moms know about girl-related things	4	8	5
More comfortable talking to someone else besides parents, eg, sibling, uncle	3	7	4
Total:	45	100	56
<i>Blames curriculum/teacher</i>			
Disliked assignments, eg, stupid or too hard; should be more multiple choice; too many assignments; too confusing; felt they already knew everything/too easy; no space to share what was discussed so why do it	13	62	16
Blames teacher, eg, student does not get assignments from teacher, implies that it's not student's fault, doesn't enforce enough, might alienate parents	4	19	5
Misunderstanding about purpose of family activities, eg, did not feel it always pertained to parents; did not realize it was an interactive family activity	4	19	5
Total	21	100	27
<i>Family reasons</i>			
Parent too busy	5	36	6
Parent uncomfortable with assignments; did not take them seriously	5	36	6
Parent did not understand sexuality concepts, eg, due to limited English or not best source to learn from	4	19	5
Total	14	100	17

(2) lack of engagement or not being in the mood to complete the assignments, eg, "I don't know. I didn't pay attention to them. . . . I just didn't want to do it," (3) adolescents' concern about family discomfort with the topic, eg, "I did like 2 of them, but my mom didn't like it. She got mad. So I stopped doing them," or (4) being too busy with other homework or other areas of their lives, eg, "Because in the beginning of this last quarter, it was really hectic. Like every class we got a lot of homework. . . . So I didn't even fit that in. I probably still have Get Real homework at my house, sitting there." Other personal reasons included gendered expectations and differential comfort level with parental figures, and a lack of engagement with all homework in general, eg, "I don't do my homework."

Most *curriculum-based* explanations pertained to (1) disliking the assignments, eg, "Because they ask similar questions . . . about things I already know too much about . . . so I just started to skip things," or (2) blaming the teacher for not handing out the assignments, not enforcing their completion, or not addressing parent reluctance to complete activities. Students also expressed misunderstandings of the purpose of the assignments, such as beliefs that parents were expected to complete these assignments on their own.

Because "dislike of assignments" was the most common *curriculum-based* reason for not completing family homework assignments, we further explored what activities students *did* find engaging through the analysis of the interview question "What was your favorite family activity?" Only 12 students described an activity that they liked; other participants

responded, "I don't know" or "I can't remember." Of the 10 who shared specific assignments they enjoyed, four of them described an assignment where students discussed a TV show or movie with their families that showed examples of healthy or unhealthy relationships. One participant described talking with her mother: "We were talking about *Twilight* and whether or not the relationships are healthy in that movie. . . . I realized that, I don't know why, but it seems sort of sexist to me. The movie or like the books or whatever. And it just seems kind of stupid to give up your life for like some random vampire. I didn't like the message." Two other participants described an assignment where they asked their parents about their own experiences as teens. One student shared: "It was like she [her mother] had to answer a question and I had to answer one. So she told me like, 'If you were your mom in that situation, what would you have done?'"

Finally, participants reported *family-based* explanations for lack of homework completion. Those shared by participants focused on (1) parents' lack of time, (2) parents' discomfort with the assignments and/or curriculum, or (3) parents' unfamiliarity with sexuality topics, eg, "She doesn't really know much about condoms because I don't think she used one"; "I asked my mom the questions, and she answered them. But at first she didn't know what abstinence meant."

DISCUSSION

Findings suggest that homework activities with families can contribute to school-based sex education

programs and can help reduce early adolescents' likelihood of having had sex between 6th and 7th grade over and above the influence of other important predictors including gender, age, and parental education. Whereas the extreme upper end of the confidence interval suggests that the effect of the program, while statistically significant, is not measurably different between the 2 groups, the lower end of the confidence interval indicates that adolescents who complete family homework assignments are only 80% as likely to have had sex as those who do not complete these activities, which represents a meaningful difference in sexual activity. The wide confidence interval is primarily due to low statistical power, reflecting the rarity of sexual activity for 7th-grade students (9% of our 7th-grade sample reported having had sex).

These findings are consistent with research identifying parents as a primary source of information about sex and influence on sexual behavior,^{7,30} although they contrast with recent findings for no effect of parent-child sexuality communication on sexual initiation.³¹ Findings that students who had had sex in 6th grade, were male, older, and did not live in 2-parent families were more likely to have had sex in 7th grade are also similar to previous research findings.¹⁵ The few evaluations of school-based programs which included homework activities did not describe these activities in detail or assess their contribution to program effectiveness.^{18,19} However, in light of findings supporting the positive impact of parent/teen communication on teen sexual outcomes^{6,7} and indications that family homework assignments can increase parent-teen sexual communication¹⁴ we believe that aspects of Get Real homework activities, such as a focus on sharing family values about sex, may have enhanced the effectiveness of sex education delivered in classrooms. Associations between family homework activities and teen sexual behavior also provide preliminary support for the theoretical grounding of Get Real in the Theory of Planned Behavior^{24,25} and reinforce the importance of multiple ecological contexts²² by incorporating students' families as a critical source of sexual learning that is often left out of sex education programs.

Qualitative findings provide clues as to why family sex education activities are not always completed, indicating that a combination of personal, curriculum, and family-based reasons affect homework output. The range of explanations also highlights students' diverse personal concerns, family environments, and levels of engagement with sexuality topics. Participants' responses also provide a window into what *does* engage students in family activities. For example, given high levels of media engagement among today's youth,³² integrating media into family activities may allow teens to bring their own interests and culture into family discussions of sex and relationships. These findings

can be taken into account in the design of both the content and potential parent interaction components of sex education curricula.

Limitations

Conclusions are limited by the fact that all data are self-report. Schools who agreed to participate in the evaluation may not reflect the larger middle school population, and therefore, findings may not be generalizable to all middle schools in the Boston area. We also acknowledge that our findings do not constitute a causal argument about the impact of homework on sex behavior. It may be that students and parents who are intrinsically more likely to engage in these types of homework activities, perhaps due to underlying qualities of parent/teen relationships, are also more likely to have other qualities, such as being better students overall, which can lead to the prevention or delay of early onset sexual behavior. Parents who do not complete family activities with their children may also be less comfortable talking about sex or less likely to pass on clear messages about delaying sex that are associated with reduced teen sexual risk behavior.⁸ These family characteristics may relate both to not completing family homework activities and to adolescents having sex.

Further, the way sex was defined, as vaginal intercourse, does not always address sexual risk-taking among lesbian, gay, bisexual, and transgender students or those that engage in nonvaginal types of intercourse; consequently, we do not know whether completing family assignments played a role in reducing the initiation of nonvaginal intercourse. Although students who volunteered for interviews were drawn from the larger survey sample, they represent a convenience sample and may differ from those who did not complete interviews. Specifically, they reported higher levels of homework participation than survey participants. Nevertheless, interview participants' responses provide a useful exploration of students' reasons for not completing homework assignments, which in future research could be developed into survey items and tested quantitatively.

Conclusions

This study adds to the literature documenting the important role of family communication in reducing adolescents' sexual risk-taking behaviors. Schools and families are 2 primary influences on teens' sexual behavior.¹⁴ The integration of family communication into a school-based intervention suggests a wider potential for influence than either school or family-based interventions could achieve alone. However, to engage students and their families effectively, programs need to address student and parent-level barriers that may interfere with family

participation. Future research would benefit from further exploration of the unique contribution of family homework activities to the overall effectiveness of sex education interventions in delaying sex for early adolescents. Triangulation of teens' and parents' perspectives on family sexual communication would inform understanding of how parents and teens perceive challenges and potential ways to enhance family involvement in school-based sex education programs.

IMPLICATIONS FOR SCHOOL HEALTH

Family homework assignments can meaningfully contribute to school-based sex education programs for early adolescents. Encouraging family involvement extends the reach of sex education programs to capitalize on family influences as well as provide needed structure and resources to parents and teens who might otherwise avoid conversations about sex. These provisions enable schools to offer parents accurate, factual information to share with their children. Use of family activities in sex education classes may also increase parent support for school-based sex education programs as it emphasizes family inclusion and helping parents share their values with their children. However, assigning family activities is not enough. Normalizing students' awkward or uncomfortable feelings about talking to their families about sex and making successful completion of family homework activities a clear expectation for sex education classes may help to increase effectiveness of the home-based sex-education activities. Students may also benefit from opportunities in their sex education classes to express their ambivalence about completing these activities and to problem-solve regarding ways to address barriers to completing assignments. Addressing systemic concerns regarding discipline and student accountability for homework assignments is critical to the success of family homework activities.

Human Subjects Approval Statement

The research was approved by Wellesley College's Institutional Review Board and by relevant review bodies for all participating schools, and all human subjects protections were adhered to.

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