

Impact of Participation in a Community-Based Intimate Partner Violence Prevention Program on Medical Students: A Multi-Center Study

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BACKGROUND: Physicians are generally poorly trained to recognize, treat or refer adolescents at risk for intimate partner violence (IPV). Participation in community programs may improve medical students' knowledge, skills, and attitudes about IPV prevention.

OBJECTIVE: To determine whether the experience of serving as educators in a community-based adolescent IPV prevention program improves medical students' knowledge, skills, and attitudes toward victims of IPV, beyond that of didactic training.

PARTICIPANTS: One hundred and seventeen students attending 4 medical schools.

DESIGN: Students were randomly assigned to didactic training in adolescent IPV prevention with or without participation as educators in a community-based adolescent IPV prevention program. Students assigned to didactic training alone served as community educators after the study was completed.

MEASUREMENT: Knowledge, self-assessment of skills and attitudes about intimate partner violence and future plans to pursue outreach work.

RESULTS: The baseline mean knowledge score of 10.25 improved to 21.64 after didactic training ($p \leq .001$). Medical students in the "didactic plus outreach" group demonstrated higher levels of confidence in their ability to address issues of intimate partner violence, (mean=41.91) than did students in the "didactic only" group (mean=38.94) after controlling for initial levels of confidence ($p \leq .002$).

CONCLUSIONS: Experience as educators in a community-based program to prevent adolescent IPV improved medical students' confidence and attitudes in recognizing and taking action in situations of adolescent IPV, whereas participation in didactic training alone significantly improved students' knowledge.

KEY WORDS: adolescent; community-based intervention; intimate partner violence; medical students.

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INTRODUCTION

Intimate partner violence (IPV) in the United States has been recognized as a significant societal problem. An estimated 8 million persons are victimized by IPV each year.¹ Patterns of conflict that precipitate IPV in the adult years often begin with adolescent dating experiences.² Twelve to 35 percent of high school students engage in or are victims of physical violence in a dating relationship.³ Clinicians believe it is a physician's role to discuss adolescent dating violence, but they are not adequately trained to do so.⁴ Seventy-three percent of pediatricians never or rarely screen adolescents for intimate partner violence.⁵ In 1 study, pediatric residents reported limited confidence in their ability to appropriately manage their adolescent patients in violent dating relationships.⁶

Currently, there is minimal exposure to adolescent health, adolescent needs, and adolescent IPV in medical school.⁷ In a survey of all 126 U.S. medical schools regarding violence curricula, content related to adult intimate partner violence, child abuse, and elder abuse was identified, but teen intimate partner violence was not noted nor emphasized.⁸ A review of the 2005/2006 AAMC curriculum management tool (CurrMIT)⁹ shows an emphasis on providing instruction in the diagnosis, prevention, appropriate reporting, and treatment of violence and abuse but does not mention adolescent intimate partner

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At the time of this study, Dr. Bigby and Dr. Miller were with the Harvard Medical School Center of Excellence in Women's Health.

violence. In addition, exposure to adolescents is limited in traditional medical school clinical experiences.

Although the number of medical schools reporting content in IPV has increased, the efficacy of various curricular approaches has not been fully investigated, and there is disagreement on the optimal model for implementing these approaches.^{8,10,11} Studies to date have examined the effect of IPV didactic training education and have demonstrated improved awareness with instruction.^{12,13} Abraham et al. demonstrated improved questioning, comfort of screening, and management of a standardized violence scenario using a combination of educational techniques such as didactic experience and role playing.¹⁴ A number of authors have also emphasized the importance of experiential learning (i.e., learning by doing).^{15–18}

Currently, there are few studies of curricular approaches for training medical students to address adolescent IPV. The current study is a pilot program to compare the effectiveness of didactic education alone versus didactic education plus participation in a community-based outreach program to improve medical students' knowledge and attitudes toward working with adolescents and addressing the topic of adolescent IPV. The primary hypothesis is that medical students who participate as educators in a community-based IPV prevention program will gain more knowledge about IPV, be more confident in their ability to intervene with patients about IPV, be more open to working with adolescents, and be more willing to participate in future community-based programs than students receiving didactic training alone.

RESEARCH DESIGN AND METHODS

In 2005–2006, 4 medical school sites recruited 123 medical student volunteers in the 1st through 3rd year. Students were from 2 private and 2 public schools in different geographic regions of the country. Recruitment and characteristics of the 117 students who completed the program at the 4 institutions are described in Online-Appendix 1. Adolescent IPV curriculum at all 4 schools included training in interviewing adolescents about risk for violence. Other curricular elements varied, but formal training in adolescent IPV was limited to a few hours or less at all schools (Online-Appendix 2). All site investigators received Institutional Review Board approval or exemption at their home institution.

Study Design

"In Touch with Teens" Curriculum. The "In Touch with Teens" curriculum was developed by the Los Angeles Commission on Assaults Against Women (LACAAW).¹⁹ The curriculum has been selected by the US Department of Health and Human Services as a model program for educating teens in dating violence and conflict resolution. It is a teen dating violence prevention program targeted to 12 to 19-year-old students. The program is appropriate for diverse racial and ethnic populations.

Key points from the curriculum focus on identifying types of abuse, specifically teen dating violence; recognizing the warning signs of an abusive relationship; identifying issues of "power and control"; and defining prescriptions for healthy relationships. Risk factors for abuse are reviewed in the training. In addition, this program stresses partnerships with local community organizations including high schools.

Didactic Training. A 3-hour interactive training session was presented by a LACAAW trainer using the same script at all 4 sites. In addition, each student received a core document that contained the curriculum objectives and a review of important issues and teaching exercises related to the outreach experience. Using this curriculum, medical students prepared to act as trainers to high school teens in the local community, providing education and exercises on intimate partner abuse awareness, relationships, and conflict resolution. All medical students completed a pretest prior and a posttest immediately after the training (posttest 1) to examine its impact (Fig. 1). Numbers in Figure 1 represent the number of students included in the analysis.

High School Experience. Students were stratified based on background experience working with teens and IPV prevention and assigned using computer-generated random numbers to a "didactic only" (control group) or a "didactic plus outreach" high school training experience. Students who were assigned to the "didactic only" group completed their high school training experience after conclusion of research (Fig. 1). Students were aware that they were participating in a study and that group assignment was random. For 9 students with scheduling problems, their group was changed and a student matched on background variables was reassigned. Reassignment was completed by the evaluator.

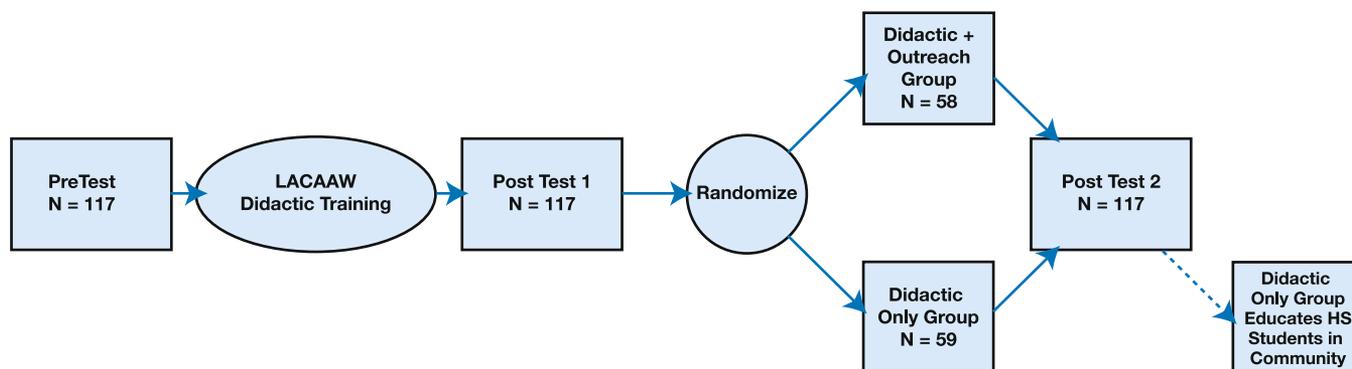


Figure 1. Study design.

Students assigned to “didactic plus outreach” high school training were placed in 3-person teams and implemented three 1-hour training sessions over the course of 2 to 3 weeks. The students were instructed to meet to review the “In Touch with Teens” curriculum and accompanying teaching exercises before attending the high school sessions.

While the majority of the trainings were done at public high schools, other sites were also utilized. These additional sites were reflective of the participating communities and included after-school programs, a boys’ and girls’ club at a tribal site, a community health center, and community-based organizations.

Program Assessment. Instrument Development and Scoring.

Knowledge of IPV was assessed by 26 true–false and 8 multiple-choice items (Online-Appendix 3) that were scored dichotomously (e.g., 1 if correct; 0 if incorrect). Students’ attitudes about the general importance of addressing IPV and their confidence in addressing IPV and working with adolescents were assessed using 15 items that students rated on 6-point scale from 1 = strongly disagree to 6 = strongly agree (Online-Appendix 4). These items were developed by study faculty and reviewed by graduate students completing the program in prior years and by the “In Touch With Teens” trainer.

Based on a principal axis factor analysis with varimax rotation, the attitude items were summed into 3 scores. The first attitude measure, labeled Confidence, included 9 items (maximum score of 54) that asked medical students how confident they are in their ability to do things like “recognize the forms of abuse” and “discuss the magnitude of the problem of domestic violence.” Four items formed the second attitude measure labeled Value of Outreach (maximum score of 24). For instance, 1 item asked how strongly students agree with the statement, “Outreach to educate or prevent domestic violence is a valuable use of a physician’s time.” Finally, 2 items, students’ plans for caring for adolescents in their future practice and students’ expectations for conducting outreach when they practice medicine, formed the third measure (maximum score of 12), Career Plans. Each measure had fair reliability based on Cronbach’s alpha which range from 0.70 to 0.88, except for alpha for the 2-item Career Plans measure using data from the pretest (Online-Appendix 4).

Medical students completed the knowledge and attitude items before the “In Touch With Teens” didactic training (pretest). Immediately following the didactic training, all students completed the multiple-choice knowledge items (posttest 1). After the “didactic plus outreach” group participated as educators in the high schools, all students, didactic only (control) and didactic plus outreach (intervention), completed the knowledge and attitude items at the same time (posttest 2). Students with missing data were deleted from analyses on a listwise basis (i.e., if a case has a missing value for any of the variables listed, that case is eliminated from the specific analysis).

ANALYSES

Knowledge and attitude measures were analyzed separately. A paired *t* test was conducted to examine differences in students’ knowledge of IPV before and immediately after attending didactic training. To examine the impact of participation as an educator in a community-based IPV education program, the knowledge level of students in the “didactic plus outreach” group was compared to that of the “didactic only” (control) group (Table 1). Analysis of covariance (ANCOVA) was used to control for level of knowledge after attending the didactic training.

For students as a whole, changes in attitudes from the pretest (before the didactic training) to posttest 2 (after the students in the “didactic plus outreach” group had completed their work in the schools) were compared using a paired *t* test.

To examine the impact of participation as an educator in a community-based IPV education program, the attitude scores of students in the “didactic plus outreach” group were compared to that of the “didactic only” group using ANCOVA to control for attitudes before the LACAAW didactic training. Item level changes in attitudes were compared for the 2 groups using multivariate GLM and adjusting the level of significance using Bonferroni’s correction.

RESULTS

Of the 123 medical students who were initially enrolled, 117 completed the study (Fig. 1). Students’ knowledge increased

Table 1. Knowledge and Attitude Means for Didactic + Outreach and Didactic Only Groups

Measure	Didactic + Outreach			Didactic Only			<i>t</i> *	<i>p</i> value
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>		
Knowledge								
Pretest	58	10.38	2.24	55	9.89	2.57	1.85	.066
Posttest 1	58	22.17	3.69	59	22.08	5.01	.108	.915
Posttest 2	58	23.41	5.03	59	21.32	6.99	1.10	.277
Attitudes—Measures								
Confidence—Pretest	57	38.39	6.65	55	36.76	6.57	1.30	.197
Confidence—Posttest 2	55	46.89	4.19	53	43.96	5.01	3.30	.001
Value—Pretest	55	22.51	1.60	54	22.54	1.63	-.396	.693
Value—Posttest 2	55	22.84	1.41	54	22.50	2.18	.955	.342
Plan—Pretest	55	9.67	2.41	56	9.43	2.58	.406	.686
Plan—Posttest 2	55	10.29	1.86	54	10.00	2.64	.667	.506

* Independent *t* tests are reported comparing “didactic plus outreach” to “didactic only” groups on each measure.

from before the didactic training to immediately after the training (mean knowledge score, for all 113 participants with complete data, 10.25, SD=2.40 vs 21.64, SD=5.14). This 11 point increase is statistically significant ($t=24.09$, $p\leq.001$) and represents a meaningful change in knowledge as indicated by a large effect size ($D=4.75$). Schools did not differ significantly on either the pre- or posttest 1. Likewise, students randomized to the "didactic plus outreach" group compared to the "didactic only" group did not differ significantly on either of these tests.

Comparing knowledge test scores after completion of the didactic training (posttest 1) to those obtained from both the "didactic only" and "didactic plus outreach" group after the "didactic plus outreach" group completed the high school experience (posttest 2) showed no significant differences for the students overall, for individual medical schools, or for intervention group (didactic vs didactic plus outreach).

The ANCOVA comparing levels of confidence resulted in posttest 2 means and standard deviations, adjusted for pretest differences, of 47.0 (SD=4.15) and 43.84 (SD=4.84) for the "didactic plus outreach" and "didactic only" groups, respectively, and was statistically significant ($F_{(1, 102)}=9.858$, $p\leq.002$). Students who conducted trainings in the high schools, the "didactic plus outreach" group, demonstrated significantly higher levels of confidence in their ability to address issues of intimate partner violence than did students in the "didactic only" group after controlling for initial levels of confidence. Differences in plans to conduct outreach and work with teens in the future changed significantly from pretest to posttest 2 for all of the students (mean score 9.58, SD 2.51 vs 10.13, SD 2.28 respectively, $t=3.127$, $p\leq.002$). However, the effect size associated with this change is modest ($D=0.22$), and didactic and didactic plus outreach students did not differ significantly in their plans to do outreach.

Values toward outreach and plans to work with adolescents and conduct outreach in their future practice did not differ for students in the "didactic plus outreach" group compared to those in the "didactic only" group. Student attitudes did not differ by school despite differences in IPV curriculum and variation between schools in the participation rate of first, second, and third year medical students.

DISCUSSION

This study demonstrated that medical students who participated as educators in a community outreach program to prevent adolescent IPV had significantly higher confidence in their ability to address IPV issues compared to students who received only a didactic curriculum. To be specific, students who implemented high school trainings had improved confidence as evidenced by higher scores on a scale that included the following elements: improved confidence in recognizing forms of abuse, discussing the magnitude of the problem, discussing partner abuse, helping the abused person to explore their beliefs and take action, providing resources for referral, and confidence in knowing and influencing teens. Knowledge was significantly improved after a 3-hour didactic session for all students.

It is difficult for medical students to have exposure to IPV victims early in medical training because of the highly sensitive nature of IPV. As a primary prevention program, the "In Touch with Teens" curriculum fills this gap and emphasizes key social and behavioral concerns in adolescent medicine. The modular

approach of the "In Touch with Teens" didactic curriculum is easily adaptable to a variety of curricular formats.¹⁹ Participation in the "In Touch with Teens" program exposes medical students to the importance of outreach, community partnerships, and utilization of community resources.

There are several limitations to this study. Medical students were recruited from various clubs and organizations that may attract students with an increased interest in or awareness of IPV; thus, the students in this study may not be representative of all medical students. Students in the "didactic only" group knew that they ultimately would participate in the community outreach program. Although the community outreach portion was not presented to the students as an educational experience per se, the "didactic only" students may have viewed the community outreach portion as additional training that they had not yet completed and therefore rated themselves as less confident in their skills to address IPV.

This study did not demonstrate an increase in value toward outreach or future plans to work with adolescents in the "didactic plus outreach" group compared to those in the "didactic only" group. This finding may be explained by a number of factors. Students in the "didactic only" group knew they would be conducting outreach over the next few months and may have been influenced by the experiences of students in the "didactic plus outreach" group. In addition, the self-selection bias of the students who participated in the study may have been a factor. This is suggested by the high value of outreach demonstrated on the pretest, which may have precluded our ability to detect significant change. Notably, there was a significant increase in interest of the medical students overall to do outreach work with teens in the future.

While improvement in knowledge of adolescent IPV was demonstrated, this study did not evaluate retention. Previous studies of IPV curricula have demonstrated some improvement in awareness but limited retention of information 2 years after instruction.¹⁶ Reinforcement of IPV education should continue throughout all years of medical school.^{10,13} In this study, skills were not formally evaluated after the outreach experience. Future studies might include evaluation of skills related to IPV prevention and treatment in the clinical setting after participation in a community education program, as well as the impact of participation in a required community education program on the knowledge, skills, and attitudes of a randomly selected group of medical students, including students who would not choose to participate in such an experience electively.

CONCLUSION

The use of the nationally recognized didactic curriculum, "In Touch with Teens," significantly improved students' knowledge of teen IPV issues at 4 geographically diverse medical schools. These results suggest that even a relatively brief introduction to the issues of IPV can increase knowledge when medical students have an immediate need to use the information presented (i.e., the need to impart the information to teens in the community). The addition of experience as community educators improved confidence in recognizing forms of abuse, discussing the magnitude of the problem, discussing partner abuse, helping the abused person to explore their beliefs, and taking action and providing resources for referral. A combination of didactic training and experience as community educators is an effective

approach to teaching motivated medical students about adolescents and intimate partner violence prevention.

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