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# Integrating Prevention and Intervention: A School Health Center Program to Promote Healthy Relationships

## *Final Summary Overview*

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## **ABSTRACT**

### Background:

Few interventions address adolescent relationship abuse (ARA) in clinical settings. This cluster randomized controlled trial tested the effectiveness of a brief relationship abuse education and counseling intervention in school health centers (SHCs). The School Health Center Healthy Adolescent Relationship Program (SHARP) is a SHC provider-delivered multi-level intervention to reduce ARA among adolescents ages 14-19 seeking care in SHCs. Intervention SHCs also involved student outreach teams who conducted school-wide ARA educational events and encouraged students to seek care at the SHC to learn more about how to respond to ARA. SHCs offer the opportunity to reach adolescents experiencing ARA (targeted intervention), identify adolescents at risk for ARA (early intervention), and provide universal education about ARA and healthy relationships (primary prevention).

### Methods:

During academic year 2012-2013, 11 SHCs (10 clusters) were randomized to intervention (SHC providers received training to implement SHARP) or standard-of-care control condition. Among 1062 eligible students ages 14 to 19 years at 8 SHCs who continued participation after randomization, 1011 completed computer-assisted surveys before a clinic visit; 939 completed surveys 3 months later (93% retention). Surveys with providers in the intervention SHCs (n=38) were conducted prior to their training and six months after the training (74% retention). Focus groups with the student outreach teams (n=22 of 29 outreach team members) were conducted at school in a confidential space, to seek their feedback on the SHARP intervention in the SHC, the range of activities they included to raise awareness about ARA and the SHC as a resource.

### Results:

Intervention versus control adjusted mean differences (95% confidence interval) on changes in primary outcomes were not statistically significant: recognition of abuse = 0.10 [-0.02 to 0.22]; intentions to intervene = 0.03 [-0.09 to 0.15]; and knowledge of resources = 0.18 [-0.06 to 0.42]. Intervention participants had improved recognition of sexual coercion compared with controls (adjusted mean difference = 0.10 [0.01 to 0.18]). In exploratory analyses adjusting for intensity of intervention uptake, intervention effects were significant for increased knowledge of relationship abuse resources and self-efficacy to use harm reduction behaviors. Among participants reporting relationship abuse at baseline, intervention participants were less likely to report such abuse at follow-up (mean risk difference = -0.17 [-0.21 to -0.12]) Adolescents in intervention clinics who reported ever being in an unhealthy relationship were more likely to report disclosing this during the SHC visit (adjusted odds ratio = 2.77 [1.29 to 5.95]). At the six month post-training time point, 33% of providers reported increased counseling about harm reduction strategies with their clients and 65% reported more comfort working with a client to identify a safe adult with whom they can share sexual and violence-related concerns. Focus groups with the student outreach teams identified key strategies for increasing ARA awareness such as information placed in bathrooms, using lunch time to provide ARA and SHC information to peers, and use of interactive theater to engage more youth.

### Conclusions:

This is the first evidence of the potential benefit of a SHC intervention to address abusive relationships among adolescents.

## FINAL SUMMARY OVERVIEW

### Purpose

The School Health Center Healthy Adolescent Relationship Program (SHARP) was a two-armed cluster randomized controlled trial (RCT) of a multi-level intervention to reduce adolescent relationship abuse (ARA) among adolescents ages 14-19 seeking care in school health centers (SHCs). The intervention components were administered by providers in health centers located within high schools and by student outreach teams in school-wide ARA prevention messages. Cluster randomization was selected in light of the design of the intervention being available to all students served by the SHC assigned to the intervention arm. The SHARP intervention consisted of three levels of integrated intervention.

### Intervention Component

- 1) A brief clinical intervention on healthy and unhealthy relationships for SHC male and female patients delivered by SHC providers during all clinic visits
- 2) Development of an ARA-informed SHC staff and clinic environment
- 3) SHC-based youth-led outreach activities within the school to promote healthy relationships and improve student safety

### Evaluation

- Patient surveys and chart review
- Provider pre and post-training surveys and interviews
- Focus groups with youth leaders and measures of school climate

### Setting

SHCs provide a range of health care services to students within their schools, such as physical examinations, treatment for illness, and prescriptions for contraceptives. SHCs represent a unique setting for addressing ARA due to the prevalence of ARA among patients, the emphasis on targeted health education during clinic visits,<sup>1-3</sup> and the potential to engage students through outreach by peer leaders.<sup>4,5</sup> SHCs reduce barriers to health care faced by adolescents, such as concerns about confidentiality, lack of health insurance, and limited knowledge of the health care system.<sup>6,7</sup> With health reform legislation, SHCs are an authorized federal program essential for health services delivery for adolescents. While standard-of-care within SHCs does not include specific protocols for ARA assessment, SHCs offer the opportunity to reach adolescents experiencing ARA (targeted intervention), identify adolescents at risk for ARA (early intervention), and offer universal education about ARA and healthy relationships (primary prevention).

Two literature reviews published between 2011 (Cutter-Wilson et al.)<sup>8</sup> and 2014 (De Koker & Matthews)<sup>9</sup> on the efficacy of ARA interventions set in schools, communities, and/or clinics. The Cutter-Wilson review,<sup>8</sup> which focused on interventions in clinical settings, found that universal screening of high-risk populations, combined with referrals to support services, are key steps in reducing both primary and secondary exposure. The De Koker<sup>9</sup> review found the most promising interventions for reducing primary and secondary exposure were school-based. The authors also suggest that clinical settings provide a crucial role in connecting youth to ARA prevention services. This is the first study of an ARA intervention to be tested in the SHC setting, as one potential component to consider integrating into school and community-level strategies to prevent and address this major public health problem.

### Procedures

Study staff recruited 11 high school SHCs in Northern California to participate in the SHARP trial. Several of the SHC schools were participating in the federal Safe and Supportive Schools (S3) project, which involves school climate interventions to reduce bullying and violence, which was accounted for in the randomization via stratification. Two of the clinics

shared providers, thus were treated as a single cluster. Ten clinic clusters were evenly randomized into intervention and control arms using computer-generated randomization.<sup>10</sup> Following randomization and prior to participant enrollment, three schools withdrew when new school administrators determined they did not want the SHC participating in research, leaving eight SHCs (seven clusters – four intervention, three control) as the final sample.

As a condition of participation, all clinics completed a Memorandum of Understanding that clearly stated willingness of the SHC director and staff to participate in the study, and that participating providers would complete an on-line certified educational training on human subjects research. All SHC staff participation in the SHARP trial was voluntary; however, as the clinic manager arranged for clinic to be closed to facilitate attendance at the training, over 90% of SHC staff and providers attended the SHARP intervention training. At the intervention sites, participation in the study's intervention training was strongly encouraged but attendance was not a condition of employment at the SHC. Health care providers and staff were told the pre- and post-training surveys (for evaluation of Component #2) were voluntary. At the control sites, providers were told that they could voluntarily receive the study's intervention training after the data collection phase was complete.

To be eligible for the patient survey (for evaluation of Component #1), SHC patients had to be 1) ages 14-19, 2) seeking services at one of the eight SHC sites, and 3) able to read English or Spanish. Exclusion criteria were 1) not being able to provide consent (e.g., if patient is intoxicated) and 2) planning to move away from the area in the next three months. As SHC patients may be receiving confidential services, parental permission for minors was waived. Parents were notified prior to study initiation through a letter mailed to homes; parents were able to prohibit their child from participating in the study if desired. No parents opted their children out from the study. During the informed consent procedure for the survey portion of the study, eligible patients also had the opportunity to sign a HIPPA authorization form permitting review of their SHC medical record.

Participants tasked with implementing the third intervention component, youth-led outreach activities within the school to promote healthy relationships and improve student safety, were recruited through flyers displayed in the SHC and through school faculty recommendations. Students who participated in the outreach teams were consented separately from SHC patients eligible for the patient surveys. Parent consent forms and student assent forms for the focus group discussions were distributed two weeks prior to the scheduled focus group. A parent explanation was sent home with the students to accompany the consent form.

School climate data for this study come from staff-reported California School Climate Survey (CSCS) and student-level California Healthy Kids Survey (CHKS) using the Fall 2011-12 (pre-SHARP timepoint) and Fall 2013-14 wave (post-SHARP) data.<sup>11</sup>

All study procedures were approved by Human Subjects Research Committees at University of Pittsburgh and Public Health Institute, and reviewed by administrators at respective schools and SHCs. Data were protected with a National Institute of Justice Privacy Certificate.

### Project Design and Description of Intervention

This study used a cluster RCT design to evaluate the effectiveness of this integrated intervention to improve adolescents' recognition of ARA, use of resources, and attitudes and behaviors to reduce ARA. A team of practitioners, violence prevention advocates, and researchers developed ARA-specific guidelines called "Hanging Out or Hooking Up: Clinical Guidelines on Responding to Adolescent Relationship Abuse - An Integrated Approach to Prevention and Intervention,"<sup>12</sup> training slides, and a palm-size brochure discussing healthy relationships, how to help a friend, and resources to address ARA. Prior to implementation of the brief clinical intervention for SHC male and female patients (Component 1) and development of an ARA-informed SHC staff and clinic environment (Component 2), all clinic staff at intervention clinics attended a 3-hour SHARP training which utilized these materials.

The training educated SHC clinicians and staff on the impact of ARA on adolescent health. Providers learned how to promote healthy relationships through universal education, conduct a brief assessment and intervention for ARA using the palm-sized brochure, offer harm reduction strategies, and how to make a warm referral to a domestic violence or sexual assault advocate. The training included attention to minor consent, confidentiality, and reporting requirements to maximize patient safety. Trainers used a combination of didactic presentation (PowerPoint presentation with handouts) and hands-on activities such as interactive multi-media (video vignettes for discussion), role play with scripted assessments, and small group exercises. Trainers stressed the importance of universal education since the intervention is inclusive of all genders and sexual orientations. Providers practiced normalization by using statements such as “This may not be happening to you but a friend might need this information” and encouraging patients to reach out to their peers and intervene if they witnessed friends experiencing ARA.

Following this 3 hour training, providers were directed to discuss healthy and unhealthy relationships with every patient and give every patient the palm-sized brochure on healthy relationships (as well as some for their friends). Further intervention components were delivered as needed to patients experiencing ARA, including discussing harm reduction strategies and connecting patients to a domestic violence or sexual assault advocate. Harm reduction strategies included offering patients a contraceptive method that does not require partner knowledge, reducing isolation through connecting with safe adults, and providing resources for breaking up safely. Non-medical staff such as administrators and front office staff also had intervention components to implement through changes to policies and resources. For example, medical charts or electronic medical record systems could be modified to include prompts for ARA assessment and staff could review ARA education materials to make sure they were inclusive of diverse relationships including sexual minority youth. During data collection, using a continuous feedback loop, the research team provided the SHC providers and managers with the weekly number (and %) of study participants who reported having a discussion with the provider (and receiving the safety card) to encourage providers to continue to implement the intervention.

For the student outreach teams, each intervention site recruited 5 – 8 student leaders to participate. Study partners from the California School Based Health Alliance (CSHA) facilitated these programs through an appointed adult ally at each site. The student-outreach teams were mentored and supervised by their respective SHC adult ally (a Health Educator) and a CSHA employee who was part of the SHARP research team. SHC staff disseminated recruitment information in the health center and to school faculty for participant recommendations. Following participant selection, each student outreach team met with the adult ally and CSHA lead to plan the activities. While the range of school-based activities varied across sites, all the outreach teams implemented two specific activities: 1) a bathroom campaign with signs in the male and female bathrooms that discuss healthy relationships and identify the SHC as a resource and 2) one school-wide activity. For example, one team held a Valentine’s Day “Hearts and Bombs” table that gave students the opportunity to write down relationship qualities or actions that are healthy or unhealthy.

### Procedures

The patient survey evaluation component was conducted via baseline survey, post-clinic visit exit survey, and follow-up survey three months post-intervention. Participants were recruited from all 8 SHCs from September to December 2012; all follow-up surveys were completed by June 2013.

*Baseline assessment:* Once assent for the patient survey was secured, study staff (a research assistant; RA) set up a laptop computer with the audio computer assisted survey (ACASI) to complete the baseline assessment; this program reads the questions aloud to

participants through headphones, thus decreasing literacy barriers while maintaining privacy. It took 15 minutes to complete this assessment on average. Following completion of the survey, patients received SHC services.

*Procedures for intervention:* The individual-level intervention for patients, described above, was conducted as an integrated component during the patient's visit with health care providers at intervention SHCs. Providers reported that on average, it took a minute or less to complete with most patients, but went longer with patients who disclosed ARA.

*Post-visit assessment:* Immediately following their clinic visit, all participants completed an exit survey. The purpose of the survey was to assess whether or not patients received the intervention, ("did your health care provider give you a card (pictured here)?" with the computer screen displaying an image of the palm-sized brochure and "did your health care provider talk with you about healthy and unhealthy relationships?"). These measures were used to ensure fidelity to the intervention and to perform intensity-adjusted analyses (described below in the analysis plan). It took approximately two minutes for patients to complete this survey.

*Follow-up assessment:* Participants were contacted for the follow-up assessment 3 months after their baseline assessment using patient-provided contact information. Participants were reminded that their participation was voluntary and offered three methods of completing the assessment: 1) same setting as baseline, using ACASI on a laptop in a private room; 2) telephone survey with an RA; and 3) online survey. For those completing the assessment via telephone or the internet, the RA verified that the participants had a safe and private place in which to answer the survey. Safety protocols were established and communicated to participants (e.g., if interrupted during the phone call, a participant could use a pre-established safety word or simply hang up).

*Chart extraction* was conducted with medical records for those participants gave permission for reviewing their medical record and who had signed a HIPPA authorization form. Items collected were 1) Date of visit, 2) Documentation that safety brochure given, 3) Reproductive coercion assessment documented, 4) Adolescent relationship abuse assessment documented, 5) Adolescent relationship abuse disclosed, 6) If positive disclosure, provider documentation of what they did for the patient.

*Focus groups* were conducted with each student outreach team following the conclusion of data collection. Discussions focused on awareness about ARA, the school-wide campaign, using the SHC as a resource, and what else can be done to prevent ARA in schools.

### Student-level Measures

The student surveys used both validated and investigator-initiated items to assess the key outcomes of interest: recognition of ARA, intentions to intervene, and knowledge of ARA resources (primary outcomes); and among youth reporting recent ARA exposure, disclosure of ARA to providers, use of harm reduction strategies, and ARA victimization (all student survey measures are summarized in table at end of document).

### Provider-Level Measures

Providers and staff in the intervention arm completed surveys at baseline, immediately following the SHARP intervention training, and 3 months follow-up. These surveys measured providers' ARA assessment practices, attitudes toward screening and intervention, self-efficacy related to assessment and intervention with youth experiencing ARA, changes in disclosures reported by SHC patients, changes in clinic protocols, availability of ARA resources, and contacts with local ARA related services.

Interviews were also conducted over the phone with a subset of providers in the intervention arm at the conclusion of the intervention period. Topics included if and how the palm-sized brochure was integrated into the SHC, positive and negative experiences with using the brochure, and recommended changes to the brochure and intervention.

## School Climate Measures

*Staff-reported school climate scale:* To assess staff perceptions of school climate, a scale of 5 variables was developed using the California School Climate Survey (CSCS) dataset. A higher score on a school climate scale indicates a more positive and supportive school climate.

Student-reported measure of ARA at the school was limited to one physical dating violence victimization item in the California Healthy Kids Survey (CHKS) that asks if during the past 12 months, the respondent's boyfriend or girlfriend ever hit, slap or physically hurt them on purpose.

## Study Flow

The study accrued 1,012 patients; 469 in the SHARP Intervention arm and 516 in the Control arm (Appendix A: CONSORT Flow Diagram). The study retained 939 participants (447 in the Intervention arm and 492 in the Control arm).

## Data Analysis

### *Student-level survey data*

To account for the hierarchical arrangement of the data (up to two measurements per student nested within SHCs) and the cluster randomization, survey data analysis methods and multilevel mixed-effects models were employed for statistical inferences. Significance was set to  $\alpha=0.05$  for all tests. Baseline demographics and other characteristics (recent ARA, cyber dating abuse, and physical or sexual violence) were collected. Wald Log-Linear Chi-Square tests for clustered survey data (using proc surveylogistic in SAS) were used to statistically compare the characteristics' distributions between intervention and control clinics. Percentage of students receiving free lunch in each school was used as a proxy of clinic-level socioeconomic status.

Except for the self-efficacy outcome, between-arm adjusted mean differences (AMD) in over-time changes of continuous outcomes were used to estimate intervention effects (i.e., the change in each outcome score attributed to the intervention). Race/ethnicity, gender, grade, U.S. nativity, and school-level socioeconomic status and S3 program participation were included as covariates. All available data were utilized, with students analyzed according to SHC treatment assignment. Sample size varied slightly across outcomes based on small amounts of missing data (missingness across outcomes ranged from <1% to 4%). As only a general self-efficacy score was assessed at baseline to reduce potential measurement effect related to querying about specific harm reduction behaviors, intervention effects on self-efficacy to use harm reduction behaviors were assessed by estimating AMD using a mixed-effects model that included the baseline general self-efficacy score as an additional covariate.

For victimization outcomes, multinomial logistic regression models for clustered data were used to estimate mean risk difference (MRD) in victimization at follow-up within subgroups (based on recent victimization status at baseline).<sup>21</sup> Only participants with baseline and follow-up data available for these outcomes were included (81% of the baseline sample); this approach was chosen to elucidate the pattern of abuse over time in each arm. For the ARA disclosure outcome, the clustered data multiple logistic regression model used a reduced set of covariates (S3 program participation, age and school-level socioeconomic status along with the binary intervention group indicator), due to small cell sizes.

All available data at follow up were utilized, within an intention-to-treat framework. To maximize power by using all available data, sample size varied slightly across outcomes based on missing data. Statistical analyses were conducted using SAS Version 9.3.<sup>22</sup>

### *Intensity-score adjusted analyses*



The brief ARA assessment intervention involved providers discussing healthy and unhealthy relationships with students seeking care at the SHCs and providing information about ARA resources on a palm-size brochure. Two items in the exit surveys completed immediately post-visit by 95% of participants assessed the “intensity” of the intervention personally delivered to each participant. Using these two items, participants reported whether their health care provider talked with them about healthy and unhealthy relationships (69%; range 63% to 79%) and whether they had received the safety brochure during the visit (55%; range 38% to 74%).

Participants were then assigned an individual score based on these measures. Intervention arm participants were assigned a score of 0.5 for no brochure and no discussion, 0.75 for either a brochure or the discussion, and 1.0 for both receiving the brochure and having the discussion. The minimum score of 0.5 for intervention participants was used because of the school-wide intervention activities (described above), which would have exposed patients to tenets of the intervention regardless of the contents of a participant’s individual clinic visit experience. All control arm participants were assigned a score of 0. The analyses described above in the planned analytic approach were then run using the intensity score (0-1.0) in place of the binary intervention variable.

#### *Provider survey and interview data*

Pre- and post-tests were administered to 38 SHARP providers (74% retention). In addition, we conducted 9 interviews to gain a greater understanding of the providers experience implementing the SHARP intervention. Frequencies from pre and post surveys were compared and summarized qualitatively. The interviews were transcribed and coded for themes including level of comfort addressing ARA and the acceptability and feasibility of integrating this intervention into SHC care.

#### *School climate data*

Data for this exploratory aim come from the staff-reported California School Climate Survey (CSCS) and student-level California Healthy Kids Survey (CHKS), conducted in high schools Fall 2011-12 (pre-intervention) and Fall 2013-14 (post). Four of the eleven schools in the randomized trial had administered both surveys and had complete data at both time points. The final sample of staff pre-intervention was 216 and 187 post. A total of 3,618 observations pre and 5797 post were available from CHKS. Analyses were conducted using Stata.<sup>10</sup> First, scales were created and psychometrics tested. Then, scale means were calculated. Following descriptive analyses, multi-level linear and logistic regression models were run to examine the association between participating in the SHARP intervention and the outcome of interest, after accounting for clustering at the school level. Multi-level linear regression was used for continuous scales, and logistic regression for all bivariate outcomes. Given the randomized study design, we did not adjust for covariates, since these are assumed to be randomly distributed and would have further reduced the effective sample size. To examine whether there was a statistically significant difference in the differences in school-level outcomes between the intervention and control group over time, from pre-SHARP to post-SHARP, we used differences-in-differences models.<sup>23</sup> These exploratory analyses had low power given the small number of schools in the sample, so p-values were unlikely to be statistically significant even if there was a true association. Findings should be considered to be illustrative of potential trends rather than definitive evidence of intervention or null effects.

#### *Student Outreach Team Focus Groups*

The focus group discussions were audiorecorded, transcribed, and coded iteratively by two members of the investigative team. Codes focused on youth descriptions of student outreach team activities, peer impressions of the ARA prevention activities, and acceptability of the SHARP intervention.

## Findings

### Student-level results

#### *Demographic characteristics and attrition analyses*

Seventy-six percent of the entire sample was female (Appendix B: Table 1). Almost all participants identified as non-White (5% White), with no significant differences between intervention and control clinics by race/ethnicity. Schools varied in students eligible for free lunch (37% to 79%). Compared to each SHC's demographics, participants were more likely to be female, in higher grades, and self-report as White, African-American and Multi-racial/Other.

Participants who did not complete the follow-up survey tended to be younger compared to those who completed ( $p=.09$ ). Non-completers were more likely to report recent ARA at baseline (61% vs. 44%;  $p<.01$ ). Attrition did not differ significantly between intervention (10%) and control (5%;  $p=0.12$ ).

#### *Differences in outcomes of interest at baseline*

Control participants had lower baseline scores on recognition of abusive behaviors and were more likely to report recent physical or sexual abuse at baseline (16% vs. 10%,  $p=0.01$ ) compared to intervention participants. Both arms were similar at baseline on recognition of sexual coercion, and knowledge and use of ARA-related resources (Appendix B: Table 2).

Females were more likely to report any recent ARA victimization at baseline (48% vs. 35%,  $p<.01$ ), as well as recent cyber dating abuse (45% vs. 31%,  $p=0.01$ ) and physical or sexual violence victimization (14% vs. 10%,  $p=0.07$ ) than males.

#### *Overall intervention effects*

Compared to controls, at follow-up, intervention participants demonstrated greater increases in recognition of sexual coercion (AMD = 0.10, 95% CI [0.01-0.18]). No differences between intervention and control emerged in recognition of ARA, intentions to intervene, knowledge of and recent use of ARA-related resources, or self-efficacy to use harm reduction strategies (Appendix B: Table 2).

#### *Intervention effects by baseline ARA*

Among those reporting recent ARA at baseline, intervention participants demonstrated an increase in recognition of ARA (AMD = 0.14, [0.01-0.27]) and knowledge of ARA resources (AMD = 0.26, [0.09-0.43]) compared to controls (Appendix B: Table 3). Analyses of intervention effects by gender revealed no significant differences. Among those reporting any lifetime experience of an unhealthy relationship or being hurt by a sexual partner, thirty-six percent of intervention vs. 22% of control patients reported disclosing to the provider (AOR = 2.77, [1.29-5.95]).

Fewer intervention participants experiencing ARA at baseline reported ARA at follow-up compared to controls (65% vs. 80%; MRD = -0.17, [-0.21, -0.12]), including cyber dating abuse (62% vs. 76%; MRD = -0.15 [-0.22, -0.09]) and physical or sexual abuse (16% vs. 24%, MRD = -0.07, [-0.12, -0.01]; Appendix B: Table 4). Among participants not experiencing ARA at baseline, the intervention was associated with less likelihood of recent physical or sexual abuse at follow-up (7.3% vs. 7.4%; MRD = -0.02, [-0.04, -0.001]).

#### *Post-hoc intervention intensity-adjusted analyses*

Intensity-adjusted intervention effects were associated with increased knowledge (AMD = 0.25, [0.11, 0.39]) of ARA resources and increased self-efficacy to use harm reduction

strategies (AMD = 0.33, [0.06, 0.60]) among intervention participants compared to controls (Appendix B: Table 2). For ARA disclosure during the clinic visit, the intervention-intensity adjusted odds ratio for the intervention was 9.30 [2.44, 35.51] (results not shown).

#### *Provider-level results*

Pre and post tests were administered to 38 SHARP providers (74% retention). Results for pre and post follow-up showed that, at the 6 month post-training time point, 33% of providers reported increased counseling about harm reduction strategies with their clients and 65% reported more comfort working with a client to identify a safe adult with whom they can share sexual and violence-related concerns. Additionally, several measures self-reported by providers assessed consistency of intervention components (>75%) of the time. Providers consistently distributing the healthy relationship safety card, Hanging Out or Hooking Up, increased from 17% pre-training to 77% post-training. Consistent assessment for ARA when a client is seeking emergency contraception increased from 40% to 52%; for STI testing, consistent ARA assessment increased from 39% to 50%.

Interviews with the providers highlighted ways in which they were able to integrate the healthy relationships intervention into their routine practices. “So in terms of the way that I think about it in my head, unless I’m concerned about something, I think that it’s like, ‘Okay, do you want multivitamins? Do you want condoms? It’s just in that tickler list, ‘Do you have your immunizations? Have we talked about healthy relationships?’ It’s just like, folding it in to all that we try to do in terms of healthy behavior.” Additionally, providers expressed some surprise about what youth were willing to disclose: “I had a young woman that I had a feeling that there was something going on and she wasn’t going to disclose to me, but then went to the health educator and brought up the card and it turns out she was having sex for money...and it was quite eye-opening for me, because I feel like it doesn’t take much if somebody is willing to talk, it’s just giving them the space and being witness to what they have to say.”

#### *Student Outreach Team results*

The focus group discussions focused on how little exposure students have to healthy relationships education. “I think just educating people about the different types of abuse so that they’re aware of it and that it’s important, and recommending places for people to seek advice and help.” They referred to different strategies they used to capture peers’ attention toward this issue: “I think that’s one thing we were doing for our project is putting up posters in the bathrooms just to increase awareness that emotional abuse is still a form of relationship abuse.” They described encouraging students to seek help at the SHC -- “In our healthy relationships presentations we was asking, “Did y’all know that you can actually go talk to people here?” and they was like “Oh, well I think they’re gonna call my parent and tell them everything I said.” And I was like “No, it’s confidential ... Most of the students really didn’t know that they could do that.” A few of the students also discussed the relevance of ARA education to their lives: “I was in a really bad relationship and talking to them [health center staff], I got out of it. Like, they helped me to realize that I’m way better and I deserve better, and it actually helped. It boosted my confidence in myself and I became a more independent young woman, I think.”

#### *School climate results*

To provide context about school environments and differences between intervention and control schools, Appendix B Table 5 presents staff-reported school climate outcomes between the intervention and control schools at pre-SHARP and at post-SHARP. The differences observed are across groups at the same time (either at pre- or post-). From pre-SHARP to post-SHARP, we had several statistically significant results in the hypothesized direction. Post-SHARP, four of the five dimensions (all except student supports) had more positive school climate outcomes in the intervention schools, compared to the control schools. At post,

intervention school staff perceived lower risk behavior, conflict and disruptive behavior by students (intervention mean 29.8 vs. control mean 33.3,  $p=0.047$ ). Intervention schools were rated safer by school staff for student safety at post-intervention: 88.1% of staff agreed/strongly agreed that school was safe for students versus control frequency 57.8%,  $p=0.023$ ). Similarly, intervention schools were rated safer for staff than control schools (92.9% versus 70.6%,  $p=0.031$ ). Also, a larger proportion of staff in the intervention schools agreed that student sanctions were determined on a case-by-case basis post-intervention (71.2% of intervention school staff vs. 45.6% of control school staff,  $p=0.013$ ).

In terms of the availability of health and safety resources, at the post timepoint, more staff in the intervention schools (versus controls) agreed that their school emphasized social, emotional and behavioral work (68.6% vs. 50.0%,  $p=.008$ ). At baseline, youth development, resilience and asset promotion resources were perceived to be more available in the intervention schools vs controls (83.9% to 62.5%,  $p=0.047$ ), showing a pre-existing strength among intervention schools prior to the SHARP intervention, and interestingly, more staff in the control schools perceived having youth development resources over time (62.5% to 70.7%).

Finally, we examined whether the average change in staff-reported school climate outcomes and the average change in student-reported ARA between intervention and control schools was significantly different over time (pre-post SHARP intervention) (Appendix B: Table 6). For two of the ten staff-reported school climate outcomes measured, namely, staff safety and case-by-case discipline policy, the intervention schools had significantly improved odds compared to control schools. Intervention schools had more than 3 times the odds of being safe for staff compared to control schools post-intervention (OR: 3.19, 95% CI: 1.67-6.07); student safety had borderline improvement as well (OR: 2.35, 95% CI: 0.97-5.67). In terms of strict discipline policy, the intervention schools had 4 times the odds of sanctioning violations on a case-by-case basis, compared to controls (OR: 3.67, 95% CI: 1.36-9.90). For ARA, no significant difference emerged between intervention and control schools at the school-level, in percentage of students who reported being a victim of physical dating violence in the past 12 months (OR: 1.08, 95% CI: 0.78-1.49).

### Implications for Criminal Justice Policy and Practice in the United States

Findings suggest the potential utility of this brief SHC provider-delivered intervention which discusses healthy relationships, integrating education and connection to resources as part of routine care. Changes in pre-specified outcomes of ARA knowledge and attitudes for the entire sample were not significant. However, exposure to the SHARP intervention was associated with improvements in recognition of sexual coercion, and among youth recently experiencing ARA, improvements in recognition of ARA and knowledge of ARA resources. Disclosure to SHC providers about unhealthy relationships was greater among participants in the intervention clinics. While the intervention did not have significant effects on use of harm reduction strategies, relative reductions in overall ARA as well as cyber dating abuse and physical/sexual violence victimization are promising. The student outreach teams may also help to increase ARA awareness among students and to encourage care seeking at the SHC. The impact of such clinic-based interventions on overall school climate remain equivocal.

Given the program's effectiveness in several individual-level outcomes and school-level outcomes, the SHARP intervention may be a promising tool to prevent the widespread crime of violence against intimate partners and to increase case identification. Developing the capacity of SHCs to address ARA may allow these sites to play critical roles in primary and secondary prevention of ARA. A key component of the provider training was on documentation. While beyond the scope of this project, given the significantly greater likelihood of disclosures about ARA in the intervention schools, the SHARP intervention may be a critical site for documenting the impact of ARA on adolescent health (which may be useful for prosecution) as well as

interrupting the complex cycle of intergenerational transmission of violence and polyvictimization.

The intervention intensity-adjusted study findings point to the critical importance of implementation of intervention with fidelity and raise questions about best strategies to ensure that providers have supports in place to deliver the intervention routinely. The role of booster trainings, learning communities, clinic-level policies to ensure routine implementation, electronic record reminders, and other clinic and school-level strategies in supporting provider delivery of the intervention should be examined.

Additionally, the success of a clinic-based intervention such as SHARP embedded in schools requires attention to the school-level supports and policies that can facilitate or hinder program implementation. Specifically, in this study, three schools had new school administrators who did not want the school participating in any kind of research. Future examination of SHARP implementation should attend to school policies and administrator concerns that may be barriers in scaling up this intervention to other sites.

### Conclusion

This is the first evidence of the potential benefit of a SHC intervention to address abusive relationships among adolescents.

### List of Appendices

- A. CONSORT Flow Diagram
- B. Tables
- C. Publication List
- D. Presentation List

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Individual Youth-Level Outcome Measures

Construct	Source	Number of Items	Response Options	Surveys			Example Items
				Baseline	Exit	Follow-up	
Hypothesis 1 (Entire Sample)							
Knowledge of abusive behaviors							
Recognition of ARA: Perceptions of abusiveness of relationship behaviors	Rothman 2006 <sup>13</sup>	10	5 point Likert scale 'not abusive' to 'extremely abusive' Mean score	X		X	How abusive do you think it is when someone does this to the person they are going out with or hooking up with: "telling them what to do all the time" "not listening to what they have to say"
Recognition of sexual coercion: Perceptions of abusiveness of relationship behaviors specific to reproductive and sexual coercion	Investigat or-developed	8	5 point Likert scale 'not abusive' to 'extremely abusive' Mean score	X		X	How abusive do you think this is: "preventing someone from using birth control" "accusing your partner of cheating when they want to use a condom"
Self-efficacy to use harm reduction strategies	Investigat or-developed	4	5 point Likert scale 'strongly agree' to 'strongly disagree' Mean score			X	"If I have an STD I am confident that my doctor, nurse, or counselor can find a way to tell my sex partner about the infection without using my name"



General self-efficacy: used as a baseline covariate in self-efficacy to use harm reduction strategies model	Schwarzer & Jerusalem 1995 <sup>14</sup>	21	4 point Likert scale 'not true at all' to 'exactly true' Mean score	X	X	"I can always manage to solve problems if I try hard enough."
Intentions to intervene: Bystander behaviors if they witness a peer committing abusive behaviors	Miller 2012 <sup>15</sup>	8	5 point Likert scale, 'very unlikely' to 'very likely' Mean score	X	X	How likely are you to stop what's happening if a peer or friend of yours is: "fighting with someone and starting to cuss at or threaten the person" "spreading rumors about someone's sexual reputation, like saying they are 'easy'"
Knowledge of ARA resources: Knowledge of resources listed	Investigat or-developed	3	Yes or no Summary score (0-3)		X	"Do you know about the Teen Dating Abuse Helpline or online chat at <a href="http://www.loveisrespect.org">www.loveisrespect.org</a> ?"
Hypothesis 2: Measures specific to those experiencing ARA at baseline						
Disclosure of ARA to SHC clinic providers	Investigat or-developed	1	Yes or no		X	[For those who endorsed ever having an unhealthy relationship]: "Today, did you tell your health care provider this?"
Uptake of any harm reduction strategies*	Investigat or-developed	4	Yes or no Yes to any	X	X	"In the past three months, have you talked to someone about the good points and bad points of ending your relationship?"
Use of ARA-related resources and services: Use of resources listed	Investigat or-developed	3	Yes or no Summary score (0-3)		X	[If said yes to knowing about this resource]: "In the past three months, have you used the Teen Dating Abuse Helpline or online chat at <a href="http://www.loveisrespect.org">www.loveisrespect.org</a> ?"

ARA victimization			Yes to any physical and sexual partner violence or cyber dating abuse item	X	X	
Physical and sexual partner violence	CTS-2 , Straus 1996 <sup>17</sup> Sexual Experiences Survey, Koss & Gidycz 1985, 2 items <sup>18</sup>	3 (1 from CTS-2, 2 from Sexual Experiences Survey)	Yes or no Yes to any	X	X	In the past three months, has someone you were going out with or hooking up with: “hit, pushed, slapped, choked or otherwise physically hurt you?” “used force or threats to make you have sex when you didn’t want to?”
Cyber dating abuse: Abusive relationship behaviors perpetrated using “mobile apps, social networks, texts, or other digital communication”	Modified from Ybarra 2007, <sup>19</sup> Bennett 2011 <sup>20</sup>	7	Never, a few times, once or twice a month, once or twice a week, and every day/almost every day, Never versus any	X	X	In the past three months, how many times has a partner: “made mean or hurtful comments to you...” “made a threatening or aggressive comment to you...” ..Using mobile apps, social networks, texts, or other digital communication?

\*asked of female participants only