8-9-2022

Examining Student Engagement with Safe Dates

Nickolas R. Langley
Georgia State University

Examining Student Engagement with Safe Dates

by

Nickolas Langley

Under the Direction of Kevin Swartout, PhD

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in the College of Arts and Sciences

Georgia State University

2022

ABSTRACT

A growing body of evidence suggests that program implementation is significantly related to the efficacy of child and adolescent prevention programming. Moreover, participant responsiveness (also referred to as engagement) has been identified as a key component of the implementation of programs designed to prevent problems like school violence, bullying, and drug use. Teen dating violence (TDV) is another significant public health issue in the United States for which prevention programs are being designed and delivered. Perhaps one of the most popular and empirically supported of these programs is *Safe Dates*, though researchers have yet to investigate students' engagement with the curriculum. Therefore, the purpose of this study was to develop a measure of engagement that could be used with *Safe Dates* and to examine whether students' engagement with the program was related to changes in students' acceptance of TDV.

Data were collected from 81 high school students (50 girls, 31 boys; ages 13-17) across eight health classes at a school in metro Atlanta where *Safe Dates* was delivered. Participants were asked about their attitudes toward various types of dating violence in a pre- and post-test survey that was administered before and after the ten-session *Safe Dates* program. Participants also completed a survey at the end of each session that asked about their behavioral, affective, and cognitive engagement with that session of the program.

Results of confirmatory factor analyses revealed that the engagement survey operated better as an overall measure of engagement rather than a set of subscales measuring each dimension. Linear growth models revealed that students' engagement with the program over the course of the ten-session curriculum was unrelated to changes in their attitudes toward female physical violence, male physical violence, verbal aggression, and jealous behaviors. Possible

explanations and limitations are discussed, as well as ways for future studies to address these. Future research should also investigate other aspects of implementation, like dosage, facilitator quality, and fidelity vs. adaptation, as they relate to *Safe Dates* and its efficacy.

INDEX WORDS: Engagement, Teen dating violence, Prevention, Implementation

Examining Student Engagement with Safe Dates

by

Nickolas Langley

Committee Chair: Kevin Swartout

Committee: Chris Henrich

Sarah Cook

Gabe Kuperminc

Electronic Version Approved:

Office of Graduate Services

College of Arts and Sciences

Georgia State University

August 2022

DEDICATION

This dissertation is dedicated to my family, whose love and support were instrumental in its completion:

To my wife: Dr. Joy Langley – for being my best friend and biggest supporter

To our two children: Oliver and Laszlo – for inspiring, motivating, and challenging me

To my brothers: Josh and Colby – for always being there for me

To my parents: Tim and Lora Langley – for supporting, encouraging, and believing in me

ACKNOWLEDGEMENTS

I would like to acknowledge those who helped in the completion of this dissertation and in my growth as a researcher, scholar, and educator. Thank you to my advisor and first committee chair, Dr. Chris Henrich, for providing support throughout my graduate career at Georgia State University and to my advisor at Clayton State University, Dr. Deborah Deckner-Davis, for doing the same during my time there. Likewise, thank you to Dr. Kevin Swartout for taking over as committee chair once Dr. Henrich left Georgia State University. Thank you to the remaining members of my dissertation committee – Dr. Gabriel Kuperminc and Dr. Sarah Cook – for your advice, feedback, and support throughout my graduate career and for this project in particular. I would also like to acknowledge Christie LeCroy and Andrea Youson-Huguley with SCSACAC for their assistance in getting this project off the ground. Lastly, thank you to my lab mates – Candace Cosnahan Evans, Mindy Reed-Morrice, Chelsea Barrows, Amanda Thompson, and Chelsea Moodie – for being a steady source of support and feedback.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AADS	Attitudes about Aggression in Dating Situations Scale
ADV	adolescent dating violence
AIC	Akaike Information Criterion
BIC	Bayesian Information Criterion
CFI	Comparative Fit Index
CDC	Centers for Disease Control
IPV	intimate partner violence
JVCT	Justification of Verbal/Coercive Tactics Scale
RMSEA	root mean square error of approximation
SCSACAC	Southern Crescent Sexual Assault and Child Advocacy Center
SRMR	standardized root square mean residual
TDV	teen dating violence
TLI	Tucker-Lewis Index

1 INTRODUCTION

A growing body of evidence suggests that program implementation is significantly related to the efficacy of child and adolescent prevention programming. Moreover, participant responsiveness (also referred to as engagement) has been identified as a key component of the implementation of programs designed to prevent problems like school violence, bullying, and drug use. Teen dating violence (TDV), sometimes referred to as adolescent dating violence (ADV), is one such problem for which a number of prevention and intervention programs have been developed and are being implemented. *Safe Dates* (Foshee et al., 1996), a school- and evidence-based prevention program, is one of the most widely used of these strategies, having been implemented in schools across the country, including here in the state of Georgia. While evaluations have generally demonstrated that *Safe Dates* is effective, researchers have yet to investigate students' engagement with the curriculum, despite an increasing awareness that engagement is an essential component of both program implementation and program participation (Weiss, Little, & Bouffard, 2005).

1.1 Implementation and Engagement

Dane and Schneider (1998) described five important aspects of prevention program implementation: adherence (i.e., fidelity), exposure (i.e., dosage), quality of delivery, participant responsiveness, and program differentiation. Fidelity refers to the extent to which a program was implemented as originally intended, and an example of this would be the aforementioned percentage of curriculum activities covered by a teacher. Dosage represents the quantity of the program, which may include the number of sessions, the length of each session, and/or the frequency of sessions. Quality of delivery refers to aspects of program implementation not directly related the delivery of prescribed content, such as the enthusiasm and preparedness of

the program facilitator(s). As the name suggests, participant responsiveness refers to how participants respond to program content and delivery, and may include indicators such as enthusiasm, attention, and engagement. And finally, program differentiation, also referred to as program uniqueness, represents the extent to which a program's theory and practices are distinct from other programs.

There is considerable evidence that implementation, and engagement in particular, has a significant impact on the effectiveness of child and adolescent prevention programs. For example, Wilson, Lipsey, and Derzon (2003) reviewed 221 school-based prevention programs targeting aggressive behaviors and found that implementation quality and program intensity were positively related to program effectiveness. Interventions were significantly more effective at reducing aggressive behaviors if they were high in implementation quality and program intensity. The authors' characterized program intensity as the degree to which the intervention was likely to be psychologically or emotionally engaging for the participants, a construct that resembles participant responsiveness component of implementation. Likewise, an analysis of over 1,400 elementary school students participating in *Steps to Respect: A Bullying Prevention Program* (STR) found that higher scores on teacher-reported, classroom-level engagement were associated with higher levels of student support, more positive perceptions of student climate, and lower levels of bullying victimization (Low et al., 2014). More recently, Lindsey and colleagues (2019) analyzed data from 118 children participating in the Coping Power intervention, a program designed for students with externalizing behavior problems, and found that engagement with the program was negatively associated with problem behaviors at follow-up.

Engagement has also been widely studied in educational settings (where it is often referred to as student engagement, school engagement, or academic engagement; Christenson, Reschly, & Wylie, 2012; Fredricks, Blumenfield, & Paris, 2004), and is increasingly being conceptualized as a key dimension of youth organized activity (Bohnert, Fredricks, & Randall, 2010; Rose-Krasnor, 2009) and out-of-school (OST) participation (Weiss, Little, & Bouffard, 2005). Across these fields and contexts, there is a general consensus that engagement is a multidimensional construct consisting of behavioral, affective, and cognitive components. Behavioral engagement refers to actions related to participation in school or organized activities, such as paying attention and directing effort toward completing some assignment or activity. Affective engagement, also referred to as emotional engagement, includes one's subjective responses to an activity, such as interest, enjoyment, and enthusiasm. Finally, cognitive engagement involves investment in learning, including self-regulation, the employment of learning strategies, and a willingness to go beyond the minimum requirements to comprehend complex ideas and master difficult skills (Fredricks et al., 2004).

In educational research, evidence suggests that engagement is both malleable and a robust predictor of a host of important academic outcomes, including learning, grades, achievement test scores, retention, graduation, and school dropout (Christenson et al., 2012). And as mentioned previously, engagement is also now recognized as an essential component of program implementation (a construct that has often been equated with fidelity; Berkel, Mauricio, Schoenfelder, & Sandler, 2011) and program participation (which is typically assessed by simple enrollment and/or attendance; Weiss et al., 2005). To date, however, zero studies have investigated students' engagement with teen dating violence prevention efforts, much less examined whether this engagement is related to important program outcomes, despite the

growing evidence that participant responsiveness is related to prevention and intervention program effectiveness.

Most studies that have looked at engagement in prevention programs have assessed it at the classroom level or at the program level. But one recent study suggests that individual engagement may be more closely related to intervention outcomes. Hansen, Fleming, and Scheier (2019) used a pre/post-test design to assess the influence of self-reported engagement at both the classroom level and at the individual level on both proximal and distal outcomes in *All Stars Core,* a school-based drug prevention program designed for 11-13-year-olds. Proximal outcomes in this program include constructs like commitment to avoid drug use and normative beliefs about drug use. Distal outcomes include a measure of antisocial behaviors and dichotomous variables indicating whether students had, in the last 30 days, smoked a cigarette, drank alcohol, and gotten drunk. Results revealed that classroom-level and individual engagement (measured once, at post-test) were significantly associated with each proximal outcome and anti-social behavior, even after controlling for pretest scores, though only individual engagement was related to actual substance use at post-test (Hansen et al., 2019). Hansen and colleagues (2019) suggest that assessments of engagement, at both the individual and classroom level, could be useful for assessing facilitator performance and program quality, and for informing and improving facilitator training.

While these findings offer evidence that engagement in school-based prevention programs is an important factor in the success of such programs, the general lack of longitudinal designs – with engagement and outcomes both being measured on the post-test survey – is a limitation across the implementation science literature. This limitation holds for school-based TDV prevention programs. Researchers have yet to investigate engagement with TDV

prevention programs at any level (i.e., student, classroom, school), much less the extent to which engagement might be related to important outcomes like changing attitudes about TDV and the perpetration or victimization of TDV. This specific limitation motivated the aims of the current study.

1.2 Teen Dating Violence

The Centers for Disease Control (CDC; 2022) defines TDV as any physical, sexual, psychological, or emotional violence that occurs within a dating relationship, including stalking, and notes that this includes a range of harmful behaviors which vary in severity. Examples of physical TDV include pushing, hitting, slapping, kicking, or otherwise intentionally trying to hurt one's partner, while psychological or emotional TDV refers to behaviors such as name-calling, threatening, and isolating one's partner from his/her friends and family. Sexual TDV includes forcing one's partner to engage in any sexual act (even kissing) when he/she does not consent and can be physical or non-physical as well. An example of non-physical, sexual TDV would be threatening to spread rumors if one's partner refuses to consent to sex. The CDC (2022) also notes that TDV occurs electronically, and researchers have recently begun examining the ways in which teens perpetrate (and are victimized) over the phone and via the internet (e.g., Baker & Carreño, 2016; Cutbush et al., 2021).

Prevalence rates of TDV and each type vary from study to study, largely as a function of how the concept(s) are defined and measured. Basile and colleagues (2020) analyzed data from the CDC's 2019 National Youth Risk Behavior Survey (YRBS), which included over 13,000 high school students. Results indicated that, of the nearly two-thirds of the sample who reported dating in the previous 12 months, 16.4% of females and 8% of males experienced some form of physical or sexual TDV during that time. Moreover, 3.8% of females and 2.1% of males reported

experiencing both physical and sexual TDV victimization during that period. It is also worth noting that while most students did not experience TDV, the majority of students who did were victimized multiple times (Basile et al., 2020). A more recent analysis of a statewide sample that also examined psychological and verbal dating aggression reported even higher rates of victimization, finding that 39% of high school students in Virginia experienced at least one form of TDV in the past year (Datta, Cornell, & Konold, 2022).

Teen dating violence (TDV), sometimes referred to as adolescent dating violence (ADV), is a significant public health issue in the United States. Cross-sectional research, and a growing body of longitudinal literature, suggests that TDV victimization is associated with a number of adverse outcomes, including depression (Holt & Espelage, 2005; Roberts, Klein, & Fisher, 2003), anxiety (Goncy et al., 2017; Holt & Espelage, 2005), unhealthy weight control behaviors (Silverman, Raj, Mucci, & Hathaway, 2001), substance use (Datta et al., 2022; Roberts et al., 2003; Silverman et al., 2001), and suicidality (Datta et al., 2022; van Dulmen et al., 2012), to name a few. Moreover, a recent meta-analysis of 101 studies produced a prevalence of 20% for physical TDV and 9% for sexual TDV (Wincentak, Connolly, & Card, 2017), suggesting that this problem impacts a substantial number of youth. To combat this crisis, researchers have developed and implemented several prevention and intervention programs aimed at reducing TDV.

While emotional or psychological TDV has been studied less frequently than physical and sexual TDV, research suggests that this is the most common type of violence in adolescent relationships. A recent study of over 5,000 adolescents using the National Longitudinal Study of Adolescent to Adult Health (Add Health) found that 30% of students aged 12-18 reported physical and/or psychological TDV victimization. 20% reported psychological victimization

only, while 8% reported both types of victimization, and 2% reported being victims of physical TDV only (Exner-Cortens, Eckenrode, & Rothman, 2013). Other studies have reported even higher rates of non-physical TDV. In a retrospective study of students at Ohio State University, Bonomi and colleagues (2013) found that 65% of females and 56% of males reported experiencing this type of TDV. Likewise, an investigation of nearly 700 Midwestern adolescents found that 58% of middle school students and 67% of high school students reported at least one incidence of emotional or psychological abuse in a dating relationship in the past year (Holt & Espelage, 2005). The measures of psychological or emotional TDV in these studies included multiple questions that addressed verbal abuse as well as stalking and controlling behaviors.

Many cross-sectional studies report significant associations between TDV victimization and a variety of adverse outcomes, most frequently symptoms of depression and anxiety (e.g., Holt & Espelage, 2005). Multiple studies have also demonstrated a relationship between TDV victimization and a variety of health risks such as substance use, disordered eating, and risky sexual behaviors (e.g., Ackard & Neumark-Sztainer, 2002; King, Hatcher, Blakey, & Mbizo, 2015; Silverman et al., 2001). Ackard, Eisenberg, and Neumark-Sztainer (2007) for example, found that TDV was significantly associated with smoking cigarettes for males and females and with using marijuana and high depressive symptoms among females. Likewise, a retrospective study of college students found that females who were victims of TDV were at greater risk for depressive symptoms, smoking, disordered eating, and frequent sexual behavior. No health differences were found for males experiencing physical or sexual TDV compared to those who experienced no TDV, though males who were victims of non-physical TDV were at greater risk of smoking and disordered eating than those who were not exposed to TDV (Bonomi et al., 2013).

Recently, a handful of longitudinal studies have documented the damaging effects of dating violence in adolescence up to eight years following victimization. Along with symptoms of depression and anxiety, revictimization is one of the most frequently studied outcomes in this body of longitudinal literature, though researchers have also examined other outcomes shown to be concurrently associated with TDV. Exner-Cortens and colleagues (2013) used data from the Add Health data set to investigate the effects of TDV five years following victimization and found that experiences of physical and psychological TDV were associated increased odds of adult intimate partner violence (IPV). In addition, males who experienced psychological TDV reported increased antisocial behaviors and greater odds of suicidal ideation and marijuana use, while female victims were more likely to report heavy episodic drinking when compared with non-victims. Moreover, females who experienced psychological and physical victimization reported greater depressive symptomology and increased odds of suicidal ideation and smoking when compared to non-victims. Interestingly, perpetration of TDV has also recently been shown to be predictive of later symptoms of depression and anxiety (Temple et al., 2016).

1.3 Interventions

TDV is clearly a significant public health issue that requires investments in primary and secondary prevention efforts. Accordingly, several interventions have been developed and implemented and some states have passed laws requiring the addition of such programming to public school curricula. Georgia Code Ann. § 20-2-314 (2003 SB 346), for example, requires that the State Board of Education include a program for preventing teen dating violence for grades 8 through 12 and mandates that the board shall encourage the implementation of such programs (though there is no penalty to schools or districts that fail to do so). Many of these programs are not being evaluated, however, prompting calls for research on the effectiveness (or

ineffectiveness) of these intervention efforts (Cornelus & Resseguie, 2007; De La Rue, Polanin, Espelage, & Pigott, 2017). A recent meta-analysis of school-based program evaluations identified 18 such interventions across 23 experimental and quasi-experimental studies. Results indicated that while these programs generally have a significant impact on dating violence knowledge and attitudes, they are often less effective at reducing TDV victimization and have no influence on TDV perpetration (De La Rue et al., 2017). The authors noted that for behavioral changes to occur, programs likely need to include skill-building components that allow for the development of important competencies, such as conflict resolution skills or the ability to leave an abusive relationship. Of the interventions included in De La Rue et al.'s (2017) review, only two explicitly incorporated skill-building activities: *Fourth R: Skills for Youth Relationships* (Wolfe et al., 2009) and *Safe Dates* (Foshee et al., 1996I).

Fourth R: Skills for Youth Relationships (Wolfe et al., 2009) is a 21-lesson curriculum delivered in ninth grade health classes in Canada that consists of 75-minute sessions by teachers who receive additional training in dating violence and healthy relationships. Lessons cover topics such as healthy relationships, types of dating violence, and conflict resolution skills, as well as sexual health and substance use and abuse. Interestingly, Wolfe and colleagues' (2009) first evaluation of the program's effects on physical dating violence revealed a gender by intervention interaction. Boys in intervention schools were less likely than those in control schools to perpetrate dating violence two years later (2.7% vs 7.1%, respectively), while there was no significant difference in perpetration between girls in the intervention and control schools. In the years since, teachers in over 1,500 schools across at least six provinces in Canada have been trained to implement the *Fourth R* program, and additional studies have examined the program's implementation, sustainability, and influence on peer resistance skills (Crooks et al., 2013).

1.3.1 Safe Dates

Safe Dates (Foshee et al., 1996) is one of the most widely used ADV prevention programs in the United States. This evidence-based program was designed to be implemented in schools and consists of a 10-session curriculum, a poster contest, and a scripted play to be performed by participants. The content and activities of *Safe Dates* include group discussions, role-playing, case studies, games, and decision-making exercises that address four theoretically-based mediating variables: dating violence norms, gender stereotyping, conflict management skills, and accessing resources. These activities are organized into 10 one-hour (or 45-minute) sessions (Foshee et al., 1996).

The pilot and initial evaluation of *Safe Dates* (Foshee et al., 1998) was a randomized controlled trial (RCT) that included 1700 eighth and ninth graders from 14 public schools in a rural county in North Carolina. Schools were matched based on size and one member of each pair was randomly assigned to a treatment or a control condition. Based on their responses to a baseline questionnaire, students in the treatment condition were further divided into three subsamples: primary prevention, victim secondary prevention, and perpetrator secondary prevention. The primary prevention subsample consisted of adolescents who reported that they had never been a victim or perpetrator of ADV, while the victim and perpetrator secondary prevention subsamples included adolescents who reported that they had been a victim or perpetrator of ADV, respectively. In the full sample, there was 25% less psychological abuse perpetration, 60% less sexual violence perpetration, and 60% less violence perpetrated against the current partner in *Safe Dates* schools than in control schools. Analyses with each subsample revealed primary and secondary prevention effects on each type of TDV perpetration, but none for victimization (Foshee et al., 1998).

This evaluation also provided evidence that *Safe Dates* influenced the proposed mediating variables at the one-month follow-up, and that these changes were associated with reductions in ADV perpetration. In the full sample, adolescents in treatment schools used more constructive communication skills and responses to anger, were less accepting of dating violence, and less likely to engage in gender stereotyping than students in control schools. Likewise, adolescents in *Safe Dates* schools reported being more aware of victim and perpetrator services than those who did not participate in the program. Interestingly, mediation analyses revealed that program effects on ADV perpetration occurred primarily through changes in dating violence norms, gender stereotyping, and awareness of services - not through changes in conflict management skills (Foshee et al., 1998). This finding is in opposition to the hypothesized importance of skill-building components in changing behavior described by other scholars (Cornelus & Resseguie, 2007; De La Rue et al., 2017).

Foshee and colleagues (2000) also conducted a one-year follow-up study, surveying over 1600 of the 1700 students from the original evaluation. Results revealed that program effects on behavioral outcomes faded, though changes in students' acceptance of dating violence, perceived negative consequences from dating violence, and awareness of community services remained (Foshee et al., 2000). The longitudinal study of this initial implementation of *Safe Dates* continued for a few more years, as Foshee and colleagues (2004) collected data from students two, three, and four years post-intervention. Interestingly, results revealed that the behavioral effects had returned: Students who participated in the program reported perpetrating less physical and sexual dating violence perpetration at the four-year follow-up than those in the control group. Likewise, *Safe Dates* had a significant effect on sexual dating violence victimization four years post-intervention such that students in the treatment condition reported less victimization

than those in the control condition (Foshee et al., 2004). A more recent (and more methodologically sound) analysis of these data used random coefficient regression modeling with multiple imputation of missing data (previous analyses employed listwise deletion) and found significant program effects on psychological, physical, and sexual dating violence perpetration, as well as physical dating violence victimization, at all four follow-up periods (Foshee et al., 2005). Based on this accumulation of evidence, the National Institute of Justice and the Centers for Disease Control recommend *Safe Dates* as an effective program for the prevention of dating violence in adolescents (CrimeSolutions.gov, 2011; Niolon et al., 2017). It is worth noting, however, that these recommendations are based solely on the results of Foshee and colleagues' longitudinal RCT in a single rural county in North Carolina (with a sample that was 76% White). No other evaluations of the program have been published.

While Foshee and colleagues (1996) did not provide much detail on the theoretical underpinnings of *Safe Dates*, they did present a model that describes the processes of primary and secondary prevention through which they hypothesized program activities to influence TDV. Primary prevention is expected to occur through changes in norms (specifically those related to dating violence and gender stereotypes) and improvements in conflict management skills. These variables, along with two cognitive factors associated with help-seeking – belief in the need for help and belief in a given action to provide help – are expected to influence secondary prevention. According to the *Safe Dates* theoretical model (Foshee et al., 1996), belief in the need for help is influenced by perceived susceptibility and severity of the problem, accurate labeling of abuse, stereotypes about abusive relationships, and attributions for the cause of violence. Belief that a given action will provide help, on the other hand, is said to be influenced by adolescents' awareness of resources and their belief that those resources can help.

This focus on primary and secondary prevention overlaps well with Shorey, Cornelius, and Bell's (2008) discussion of how a behavioral framework could be utilized to inform dating violence prevention programming. Responding to calls for more comprehensive theoretical frameworks that account for the heterogeneity of dating violence, Bell and Naugle (2008) introduced a contextual model of intimate partner violence (IPV) that incorporates Behavior Analytic (Myers, 1995), Social Learning (Bandura, 1971, 1973; Milhalic & Elliott, 1997), and Background/Situational (Riggs & O'Leary, 1989, 1996) theories. This conceptual framework includes six contextual units, or categories of constructs, that are hypothesized to be related to dating violence perpetration: Antecedents, discriminative stimuli, motivating factors, behavioral repertoire, verbal rules, and consequences. The authors also identified potentially relevant proximal variables within each unit but noted that their lists were not exhaustive; researchers are encouraged to identify and study additional variables within each unit and how they might be related to dating violence.

Two of the six contextual units outlined by Bell and Naugle (2008), behavioral repertoire and verbal rules, are particularly relevant with respect to *Safe Dates* as they include proximal variables that are explicitly mentioned as targets for change in the program's theoretical model. Behavioral repertoire refers to skill sets an individual may possess which they can perform competently in a given situation to attain some desired outcome. Deficits in these areas may result in an increase in maladaptive behavior to attain that outcome. For example, there is evidence that poor problem-solving, emotion regulation, and conflict resolution skills are associated with dating violence perpetration (Bonache, Gonzalez-Mendez, & Krahé 2017; Feldman & Gowan, 1998; Smith-Darden et al., 2017). Accordingly, some prevention and intervention efforts, including *Safe Dates*, attempt to improve participants' skills in conflict

resolution and anger management, for example. As noted previously, however, results from the first evaluation of *Safe Dates* indicated that program effects on dating violence perpetration occurred primarily through changes in dating violence norms, gender stereotyping, and awareness of services - not through changes in conflict management skills (Foshee et al., 1998).

Verbal rules are stimuli that influence the target behavior by describing the potential outcomes of engaging in a behavior (Bell & Naugle, 2008). For example, an individual who believes that hitting his/her partner is an acceptable way of expressing his/her anger is probably more likely to perpetrate dating violence than someone who believes this behavior is unacceptable. Likewise, whereas the former individual may anticipate neutral, or even positive outcomes from such behavior, the latter may associate dating violence perpetration with negative consequences (in his/her own self-image and/or peers, family, society). Bell and Naugle (2008) note that the use of the phrase "verbal rules" rather than "beliefs" is to remain consistent with behavioral concepts and theory. Examples of verbal rules related to dating violence include cultural beliefs related to violence and aggression, acceptance of dating violence or dating violence norms (Foshee et al., 2001; Peskin et al., 2017; Temple et al., 2016), and patriarchal beliefs such as gender stereotypes (Reidy, Berke, Gentile, & Zeichner, 2014), the latter two of which are explicitly addressed in the *Safe Dates* curriculum. Cultural beliefs that have been related to dating violence include the notion that men are superior to women and/or that they have the right to 'correct' or discipline women (WHO, 2009). Cultural beliefs may also be related to help-seeking behavior that is important for secondary prevention, such as the idea that intimate partner violence is a taboo subject and that reporting abuse is disrespectful, as well as the extent to which self-reliance is emphasized within a culture (WHO, 2009; Shen, 2011). With respect to patriarchal beliefs, there is longitudinal evidence that a stronger belief in gender

stereotypes among girls is predictive of chronic sexual dating violence victimization (Foshee et al., 2004).

While each of these proximal variables has been shown to be related to experiences of TDV, several recent studies suggest that acceptance of dating violence is a particularly strong predictor that is associated with both perpetration (Josephson & Proulx, 2008; Smith-Darden, Kernsmith, Reidy, & Cortina, 2017; Reyes, Foshee, Niolon, Reidy, & Hall, 2016; Temple et al., 2016) and victimization (Karlsson, Temple, Weston, & Le, 2016; Orpinas et al., 2013). Orpinas and colleagues (2013), for example, used latent class mixture modeling to examine trajectories of physical TDV victimization (low and high) and perpetration (low and increasing perpetration) and found that adolescents who reported fewer TDV victimization and perpetration experiences reported lower acceptance of TDV perpetration, while adolescents who reported more TDV experiences reported greater acceptance of TDV. More recently, Temple et al. (2016) investigated the longitudinal relationship between acceptance of dating violence, psychological abuse perpetration, and internalizing symptoms in a sample of over 1,000 Texas public high school students. Results revealed that acceptance of dating violence was positively related to reports of TDV perpetration one year later.

There is also evidence that acceptance of dating violence is an important moderator/mediator related to TDV perpetration within different contexts. Reyes and colleagues (2016), for example, found that acceptance of dating violence moderates the longitudinal relationship between gender stereotypes and male TDV perpetration such that gender role attitudes were associated with an increased risk for TDV perpetration 18 months later for boys who reported high, but not low, acceptance of dating violence. Studies have also found that acceptance of dating violence mediates the relationship between exposure to interparental

violence and the perpetration of TDV for boys and girls (Karlsson et al., 2016; Temple, Shorey, Tortolero, Wolfe, & Stuart, 2013). Further supporting this notion, Connolly and colleagues (2010) found that acceptance of dating aggression mediated the relationship between violent media exposure and dating aggression in Canadian adolescents one year later.

Because these constructs are included in the theoretical model that the program is based on, evaluations of *Safe Dates* typically assess its influence on relevant aspects of students' behavioral repertoire (conflict management, responses to anger) and verbal rules (dating violence norms, gender stereotypes). However, there is little research that considers the implementation of (or participation in) *Safe Dates*, and none that ties aspects of implementation or participation to these outcomes. In Foshee and colleagues' (1998) pilot and initial evaluation, the authors report a few overall figures that demonstrate high levels of fidelity and participation: Classroom attendance in *Safe Dates* sessions ranged from 95% to 97%, teachers covered 90.7% of intended curriculum activities, and 97% of students were present for the scripted play performance. These variables were not included in analyses to determine their potential relation to important outcomes, however, and no other aspects of implementation or participation of *Safe Dates* have been assessed. This is important because there is a growing consensus among researchers that implementation, and engagement in particular, is strongly related to program success (Durlak & DuPre, 2008; Dusenbury et al., 2003; Low et al., 2014), and that participation encompasses more than attendance (Weiss et al., 2005). Moreover, without collecting data on program implementation or participation, it is impossible to assess the effects of modifications to program content or delivery (Dane & Schneider, 1998).

1.4 Research Questions

1.4.1 Research question 1

Does a brief survey of engagement developed to assess the unique, but related, dimensions of engagement (behavioral, affective, and cognitive) in a TDV prevention program do so with adequate psychometric properties?

Although there is a consensus that student engagement is multi-dimensional, and many scholars agree on a tripartite conceptualization including behavioral, affective, and cognitive components, this model has not been applied to evaluations of school-based prevention programs like *Safe Dates*. The few studies that have looked at program engagement have typically used a handful of items to represent engagement with no attention to its underlying dimensions. Because my survey items are based on a theoretically and empirically valid measure of school engagement (Fredricks, Blumenfeld, Friedel, & Paris, 2005), *I hypothesized that results of a CFA will demonstrate the data fit the hypothesized model, with four items each representing behavioral, affective, and cognitive engagement as latent constructs, respectively.* This 3-factor model was compared to a single factor model specifying 12 items as indicators of a single, overall engagement construct.

1.4.2 Research question 2

Are students' behavioral, affective, and/or cognitive engagement (as well as their overall engagement) with *Safe Dates* associated with changes in students' attitudes toward dating violence? Are any of these effects moderated by gender and/or program attendance?

Although there is no research on engagement with the *Safe Dates* program, specifically, there is theoretical and empirical evidence that engagement is an important component of program implementation (Durlak & DuPre, 2008; Wilson et al., 2003). Moreover, there is

evidence that female students tend to be more engaged than male students (Christenson et al., 2012), and that program attendance is generally related to outcomes in prevention programs (Charlebois et al., 2004), though these questions have also yet to be examined with respect to *Safe Dates*. Therefore, *I hypothesized that students' overall engagement with the Safe Dates curriculum will be significantly associated with changes in attitudes toward dating violence, such that students who are more engaged will report more negative attitudes toward dating violence.* To test this hypothesis, I used structural equation modeling to examine whether engagement is related to changes in attitudes toward dating violence from pre- to post-intervention and whether this relationship varies as a function of gender and/or attendance.

2 METHOD

2.1 Participants

Data were collected from 81 high school students (50 girls, 31 boys) across eight health classes at a public school in metro Atlanta where Southern Crescent Sexual Assault & Child Advocacy Center (SCSACAC) was delivering *Safe Dates*. The school of roughly 1,500 students was one of two chosen to receive the program by SCSACAC because of connections with teachers who requested it for their students. Attempts to obtain an agreement to collect data from students at the other were unfortunately unsuccessful. Participants' ages ranged from 13-17, though over 95% were freshmen between the ages of 14 and 15. The majority of participants (69.1%) were Black, while 12.3% were Hispanic, 9.9% were White, 6.2% were multiracial, and 2.5% were Asian American. All ten sessions of *Safe Dates* were delivered by the same facilitator from SCSACAC across a five-week period beginning in October of 2019.

2.2 Procedure

Parental consent forms outlining the purpose and details of the study were sent home with students at the beginning of the fall semester of the 2019-2020 academic year. The details of the study were described to students who were asked to return a parental consent form if they would like to be eligible to participate. Students were advised that their participation is voluntary and that they could withdraw from the study at any time. Students were also assured that their responses would be entirely confidential, that their completed surveys would be kept in a locked filing cabinet, and that no identifying information would be input or published. Out of the 170 students who were enrolled in the eight health classes where *Safe Dates* was delivered, 81 provided the necessary parental consent and assented to participate in the study, resulting in a participation rate of 47.6%.

Data collection began in October and concluded in November of 2019. *Safe Dates* consists of nine 50-minute sessions (see Appendix B) designed to change adolescent norms on dating violence and gender-roles, improve conflict resolution skills, promote beliefs in the need for help and awareness of community resources for dating violence, encourage help-seeking by victims and perpetrators, and develop peer help-giving skills (Foshee et al., 1996). Students are given a workbook with handouts for each session that cover topics such as healthy vs. unhealthy relationships and recognizing examples of dating abuse, and some sessions include role-play scenarios where students can practice asking for help as a victim, offering help to victims, and letting perpetrators know that their abusive behavior is not okay. The final session features a scripted play and poster contest, though SCSACAC did not implement the play portion of the program and modified the poster contest to a meme contest, with students working on their memes and taking the post-test during the tenth session. Students participated in *Safe Dates*

sessions during their health class on Thursdays and Fridays for five weeks until the curriculum was completed. As stated previously, a single facilitator from SCSACAC delivered all sessions across all classes.

As part of their participation in *Safe Dates*, students were asked by SCSACAC to complete a Program Survey at the beginning and end of the curriculum. Attached to this survey was a one-page questionnaire that asked about students' attitudes toward different types of dating violence. These surveys were completed by all students, but only those who returned completed parental consent forms and who provided assent were collected and included in analyses. Surveys of students' engagement with the program were also collected at the end of each session. These surveys were distributed at the beginning of each session when students were given their workbooks, though only students who provided the necessary consent and assent received them. All surveys were completed using pencil/pen in the classrooms in which *Safe Dates* was facilitated. Because these surveys contain identifying information (students' first and last name), completed surveys were placed in a large brown envelope after each class and transported to a locked filing cabinet upon leaving the school. Data were de-identified before being input by assigning each participant a unique student ID number, and all data were stored on a password-protected server.

2.3 Measures

2.3.1 Engagement

At the end of each session, participants completed a 12-question survey of their behavioral, affective, and cognitive engagement with that session of the curriculum (see Appendix A). This survey was developed for the purpose of this study based upon the survey of school engagement by Fredricks, Blumenfeld, Friedel, & Paris (2005). Items were selected and

modified to fit the context of the *Safe Dates* curriculum, as opposed to schoolwork. Students were asked to indicate the extent to which they agree or disagree (on a 5-point Likert scale) with statements related to their attentiveness and participation (behavioral engagement), interest and enthusiasm (affective engagement), and effort to focus on and make connections to the material being taught (cognitive engagement), with each dimension of engagement being represented by four items.

Prior to the present study, a version of this survey was piloted with 45 students participating in a GED program at Hearts to Nourish Hope. A confirmatory analysis of these students' responses specifying four items for each of the three dimensions of engagement revealed that this survey may be better utilized as an overall measure of engagement. Though all standardized factor loadings for each item were greater than 0.7, the latent constructs were extremely highly correlated with one another, resulting in a covariance matrix that was not positive definite. It is worth noting, however, that this sample was small, less diverse, and quite different demographically from the high school students the survey was developed for. The overwhelming majority of students surveyed at Hearts to Nourish Hope were over the age of 18 and Black. For these reasons, further examination of the survey's factor structure was warranted.

2.3.2 Attitudes toward dating violence

Two measures (see Appendix A) were used to assess adolescents' attitudes toward different types of TDV pre- and post-intervention, both of which were developed by Slep, Cascardi, Avery-Leaf, and O'Leary (2001): The Attitudes about Aggression in Dating Situations Scale (AADS) and the Justification of Verbal/Coercive Tactics Scale (JVCT). The AADS consists of 12 items that describe a variety of physical dating aggression scenarios that feature male-to-female and female-to-male violence and ask respondents how much they agree or

disagree with the behavior that is underlined. Sample items include "Peter gets really angry at Patti and slaps her when she threatens to break up with him" and "Tony is harassing Gina about her new haircut, saying that she looks like a poodle. Gina gets really angry at Tony and pushes him" and response options range from strongly disagree (1) to strongly agree (6), meaning higher scores indicate more agreement with aggressive dating behavior. Exploratory and confirmatory factor analyses of these items indicated three subscales: Justification of Female Physical Aggression (FP), Justification of Male Physical Aggression (MP), and Justification of Peer Physical Aggression (PP), though two items did not load onto any factor in the EFA and were therefore excluded from the CFA. Since the focus of this project was on dating violence and not peer violence, the remaining 8 items (four FP, four MP) were used in the current study. Alphas for the FP and MP subscales at pre- and post-test ranged from 0.67 to 0.91 (see Table 1).

Table 1. Attitudes Toward Dating Violence Scale Reliabilities

Scale	α
Female Physical Violence Pre-Test	.67
Female Physical Violence Post-Test	.77
Male Physical Violence Pre-Test	.85
Male Physical Violence Post-Test	.91
Verbal Aggression Pre-Test	.84
Verbal Aggression Post-Test	.72
Jealous Tactics Pre-Test	.88
Jealous Tactics Post-Test	.86

The JVCT features 22 items that assess attitudes toward the use of three types of psychological dating violence (verbal aggression, controlling behaviors, and jealous tactics). Respondents were asked to indicate on a 5-point scale ranging from "not justified NO MATTER WHAT" (1) to "justified in MANY situations" (5) the extent to which various behaviors and tactics is justified for males and females separately. As with the AADS, higher scores indicate more positive attitudes toward the type of psychological dating violence in question. Sample

items include "Insulting or swearing at boyfriend/girlfriend" and "Being jealous and suspicious of his/her friends," and respondents are asked to rate the justification of 11 tactics for males and females separately (for a total of 22 items). The measure consists of three subscales for males and females (totaling six): justification for female/male verbal aggression, justification of female/male control tactics, and justification of female/male jealous tactics. For the purposes of this study, only the verbal aggression (three items) and jealous tactics (four items) subscales for both males and females were used (for a total of 14 items), as the control tactics scale was determined to be substantially non-normally distributed and significantly lacking in stability and convergent validity, resulting in its authors' suggestion that these items may be omitted without diminishing the usefulness of the JVCT (Slep et al., 2001). The verbal aggression and jealous tactics scales demonstrated good internal consistency, with alphas ranging from 0.72 to 0.88 across pre- and post-test (see Table 1).

2.3.3 Other predictors

Students were asked to report their gender on the sign-in sheets that SCSACAC used to track attendance. Of the 81 students in the final sample, 50 (61.7%) were girls and 31 (38.3%) were boys. Participants' attendance was also tracked through their completion of engagement surveys, resulting in scores indicating how many sessions (out of 10) students attended. Because the sign-in sheets were distributed at the beginning of class and the engagement surveys were completed at the end of class, engagement surveys were used to assess attendance to ensure that students were present for the entire session (as opposed to being present at the beginning of the session but checking out of school before the session ended). The mean number of sessions attended among participants was 8.2 (median = 9), with 71 out of 81 students (87.7%) attending at least 7 of the 10 sessions (see Figure 1). These variables were included in analyses as

predictors and gender was examined as a potential moderator. Plans to investigate attendance as a potential moderator were impeded by the lack of variability in this measure within the study sample.

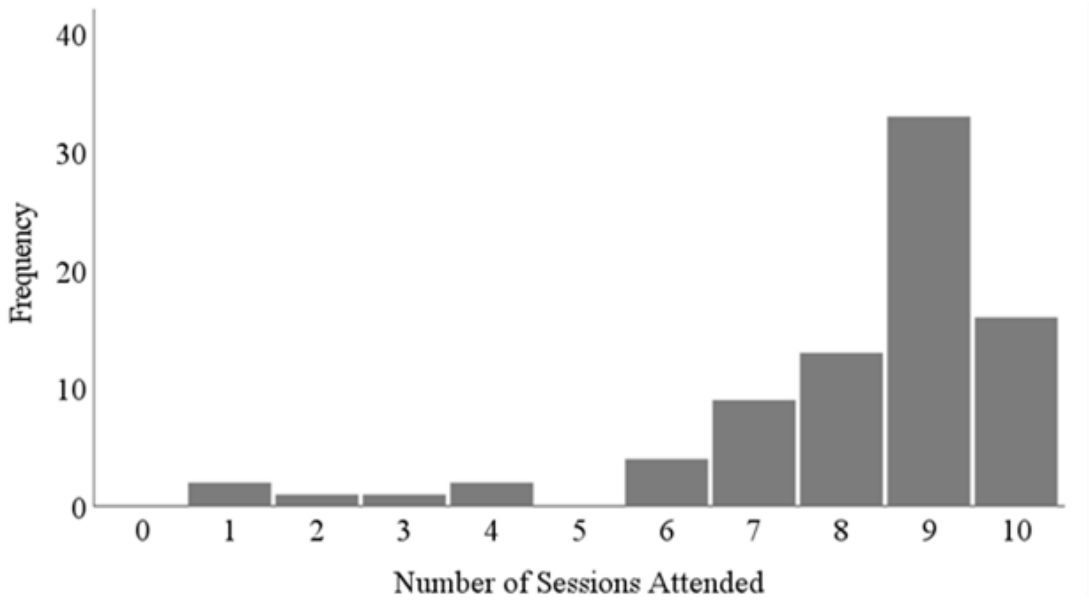

Figure 1. Attendance

2.4 Statistical Analysis

Preliminary analyses, including checks for missing data and normality and an examination of correlations among variables of interest, were conducted using IBM SPSS Statistics 28. Confirmatory factor analyses and growth models were completed using Mplus version 8.8. Given the non-normality of the variables of interest, MLR estimation was used in these analyses as it is robust to these violations. Missing data were handled using full information maximum likelihood estimation, except for predictor variables in the growth models. Because no participants were missing scores on gender and attendance variables, this means the only participants excluded from these analyses were those who were missing the pre-test score associated with the post-test score in a particular model. Growth models were recentered so that

session five would be the intercept as this midpoint represented a more interpretable choice for this value than session one.

Two approaches were used to assess how well the proposed CFAs and growth models fit the data. First, four fit indices were examined and compared across potential models: the root mean square error of approximation (RMSEA), the standardized root square mean residual (SRMR), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI). Guidelines for determining model fit using these indices were obtained from the summary published by Hooper, Coughlan, and Mullen (2008). The RMSEA and the SRMR are absolute fit indices and are therefore measures of how well the proposed model fits in comparison to no model at all. Values for the RMSEA and the SRMR range from zero to one, with lower values indicating better fit. For the RMSEA, a cut of value of 0.06 or a strict upper limit of 0.07 is the general consensus for good fit and for the SRMR well-fitting models have values lower than 0.05, though 0.08 is also an accepted upper limit (Hu & Bentler, 1999; Steiger, 2007).

The CFI and the TLI are incremental fit indices, also known as comparative or relative fit indices, and are measures of how well the proposed model fits in comparison to a baseline model. Values for each of these statistics range from zero to one, with higher values indicating greater fit. For the CFI, which is one of the fit indices least effected by sample size, a value of 0.95 or greater is recognized as indicative of good fit. The recommended threshold for the TLI, an index that prefers simpler models, is also 0.95 (Hu & Bentler, 1999).

In determining the fit of structural equation models, Hu and Bentler (1999) proposed a two-index presentation that provides three options of fit index combinations and cutoffs that can be used. One option is that the TLI should be 0.96 or higher and the SRMR should be 0.09 or lower. A second combination looks at the RMSEA and the SRMR, whose values should be

below 0.06 and 0.09, respectively. The third option involves the CFI, which should be 0.96 or greater, and the SRMR, which should be 0.09 or lower. Each of these index combinations were examined across confirmatory factor analyses and growth models.

The relative fit of the proposed growth models was also examined by using Satorra-Bentler chi-square difference tests, correcting for MLR scaling factors. Nested model comparisons among the growth models for engagement - intercept-only, linear, quadratic, and cubic - were calculated using loglikelihood values and MLR scaling factors to see which model best fit the data (Satorra & Bentler, 2010).

Because the confirmatory factor analyses of interest were not nested models, chi-square difference tests could not be used to compare fit across the 3-factor and 1-factor models. Instead, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were examined. These values are parsimony fit indices and are used to compare non-hierarchical models that use the same data. When comparing confirmatory factor analyses, models with smaller AIC and BIC values are more parsimonious and therefore superior (Hooper, Coughlan, & Mullen, 2008).

3 RESULTS

3.1 Preliminary Analyses

Data analysis began with an examination of descriptive statistics to check for missing data, input errors, outliers, and normality. Of the 81 participants, 70 completed both the pre- and post-test, 8 only completed a pre-test, 2 only completed a post-test, and 1 completed neither the pre- nor the post-test. Some participants left one or more items blank on an engagement survey (this occurred 11 times across all participants and all ten sessions), pre-test (this occurred nine times across all participants), and/or post-test (this occurred four times across all participants),

though these were rare and did not occur in any particular pattern that would influence results. Specifically, there were 11 instances where a student left an item blank on the engagement survey No input errors or outliers were detected. As for normality, the skewness and kurtosis of engagement and pre/post-test scale scores were examined. Results revealed that engagement scores were negatively skewed across each of the ten sessions, suggesting that students generally reported being engaged with the *Safe Dates* curriculum.

Another important first step was to determine how best to treat these outcomes of interest – either as overall scales indicating a participants' general agreement with the use of physical violence, verbal aggression, and jealous tactics or as subscales indicating a participant's agreement with males' and females' use of these forms of dating violence separately. An assessment of the bivariate correlations among these scales at pre-test (see Table 2) revealed very high correlations on the male and female subscales of the JVCT, suggesting that participants tended to respond the same to these items regardless of whether the perpetrator was a boy or girl. The correlation between attitudes toward female verbal aggression and male verbal aggression was 0.82 ($p < .001$), whereas the correlation between attitudes toward female jealous tactics and male jealous tactics was 0.87 ($p < .001$). Accordingly, these scales were combined into an attitude toward verbal aggression and attitude toward jealous tactics for the remaining analyses.

Table 2. Correlations Among Pre-Test Scales

Variable	FP	MP	FV	MV	FJ	MJ
Female Physical		.47***	.24*	.26*	.18	.26*
Male Physical			.27*	.28*	.10	.31**
Female Verbal				.82***	.38**	.37**
Male Verbal					.37**	.37**
Female Jealous						.87***
Male Jealous						

Note. *$p < .05$. **$p < .01$. *** $p < .001$

Descriptive statistics for participants' pre- and post-test scores on their attitudes toward different types of dating violence are presented in Table 3. Scores on attitudes toward male physical violence at both pre- and post-test were positively skewed, indicating that participants generally disagreed with this type of dating violence.

Table 3. Descriptive Statistics for Pre- and Post-Test Scales

Variable	Mean	SD	Skewness
Pre-Test			
Female Physical Violence	3.81	0.92	-.07
Male Physical Violence	2.05	1.01	1.36
Verbal Aggression	2.84	0.87	0.30
Jealous Tactics	3.13	0.85	-0.20
Post-Test			
Female Physical Violence	3.16	1.08	-.06
Male Physical Violence	1.96	1.02	1.77
Verbal Aggression	2.40	0.78	0.49
Jealous Tactics	2.42	0.85	0.62

Bivariate correlations were also used to examine the associations among engagement, attitudes toward TDV at pre- and post-test, and the potential moderating variables of gender and attendance (see Table 4).

Table 4. Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender		.09	.09	.11	-.23*	-.00	-.24*	-.02	-.09	-.25*	-.28*	-.13
2. Att			.08	.08	-.09	-.08	-.17	-.07	.12	.03	.17	.07
3. E-I				.76**	.02	-.09	-.12	-.05	.06	.17	-.19	-.06
4. E-S					.10	-.16	.08	-.18	.11	.11	-.21	-.08
5. FP-Pre						.41**	.47**	.14	.32**	.23	.24*	.32**
6. FP-Post							.11	.51**	.03	.14	.18	.22
7. MP-Pre								.24*	.28*	.11	.21	.16
8. MP-Post									.05	.10	.16	-.02
9. V-Pre										.39**	.39**	.27*
10. V-Post											.26**	.62**
11. J-Pre												.39**
12. J-Post												

Note. Att = attendance, E-I = engagement intercept, E-S = engagement slope, FP-Pre = attitudes toward female physical violence (pre-test), FP-Post = attitudes toward female physical violence (post-test), MP-Pre = attitudes toward male physical violence (pre-test), MP-Post = attitudes toward male physical violence (post-test), V-Pre = attitudes toward verbal aggression (pre-test), V-Post = attitudes toward verbal aggression (post-test), J-Pre = attitudes toward jealous tactics (pre-test), J-Post = attitudes toward jealous tactics (post-test).
*$p < .05$. **$p < .01$.

Gender was negatively associated with all pre-test scales except for attitudes toward verbal aggression, indicating that boys at pre-test were more likely to agree with the use of jealous tactics and of physical dating violence by both boys and girls. Interestingly, for attitudes toward verbal aggression, the negative correlation with gender was observed on the post-test suggesting that boys were more likely to agree with this type of dating violence than girls after completing the *Safe Date*s program. Gender was unrelated to the other post-test scales. Attendance was unrelated to all other study variables.

3.2 Research Question 1

To address research question 1, confirmatory factor models were fit to participants' data on program engagement at each of the ten sessions of *Safe Dates*, specifying four items for each dimension of engagement (behavioral, affective, and cognitive). The fit statistics of these models were somewhat poor (see Table 5), and many of the factor loadings for individual items were below 0.5, suggesting that this three-factor model was not a good fit for the data.

Table 5. Goodness of Fit Indicators Among Confirmatory Factor Analyses

Session	Model	RMSEA	CFI	TLI	SRMR	AIC	BIC
1	3-factor	0.17	0.88	0.85	0.07	1415.14	1486.75
	1-factor	0.16	0.84	0.83	0.07	1409.01	1486.58
2	3-factor	0.22	0.63	0.52	0.16	1626.54	1701.93
	1-factor	0.23	0.61	0.49	0.12	1595.32	1676.99
3	3-factor	0.12	0.73	0.87	0.11	2020.84	2102.29
	1-factor	0.13	0.90	0.86	0.10	1920.04	2008.29
4	3-factor	0.13	0.90	0.87	0.06	1622.82	1701.64
	1-factor	0.12	0.90	0.87	0.06	1614.22	1699.62
5	3-factor	0.18	0.80	0.74	0.09	1851.72	1934.17
	1-factor	0.19	0.76	0.71	0.09	1813.25	1902.58
6	3-factor	0.26	0.68	0.58	0.12	1727.36	1806.73
	1-factor	0.23	0.73	0.67	0.10	1696.31	1782.29
7	3-factor	0.14	0.70	0.77	0.08	1760.14	1840.04
	1-factor	0.15	0.88	0.86	0.07	1732.47	1819.03
8	3-factor	0.16	0.86	0.82	0.11	1621.43	1699.71
	1-factor	0.17	0.85	0.82	0.08	1604.46	1689.26
9	3-factor	0.15	0.88	0.84	0.10	1728.63	1809.06

10	1-factor	0.17	0.83	0.79	0.08	1673.36	1760.49
	3-factor	0.22	0.75	0.70	0.10	1692.17	1773.12
	1-factor	0.16	0.87	0.84	0.09	1557.89	1645.28

The reliabilities and inter-factor correlations among each of these three subscales were also examined. While the reliabilities for each subscale at each session were all greater than 0.8, the correlations among them revealed another issue. In all but two of the ten sessions, the correlation between the behavioral and affective factors was greater than 0.8 (and in three sessions it was greater than 0.9). Likewise, in all but three of the ten sessions, the correlation between the behavioral and cognitive factors was greater than 0.7 (and in four sessions it was greater than 0.9). A similar pattern emerged with affective and cognitive engagement, with the correlation between these two factors being greater than 0.7 across all ten sessions, and greater than 0.9 in three sessions.

Confirmatory factor analyses specifying one overall factor of engagement for each session were also conducted to assess whether this model would be a better fit for the data. Fit indices were similar to the three-factor model across all ten sessions (see Table 5), as were the factor loadings (see Table 6). Though none of the models met any of the 3 the combined index fit requirements proposed by Hu and Bentler (1999), a comparison of AIC and BIC values (see Table 5) revealed that the 1-factor model was a better fit than the 3-factor model across all ten sessions. These findings support those from the pilot of this survey and suggest that the measure assesses a unidimensional engagement construct.

Table 6. Factor Loadings Among Confirmatory Factor Analyses

Session	Model	Median	Minimum	Maximum
1	3-factor	0.82	0.53	0.91
	1-factor	0.76	0.55	0.93
2	3-factor	0.62	0.40	0.96
	1-factor	0.68	0.30	0.84
3	3-factor	0.65	0.44	0.92
	1-factor	0.68	0.49	0.92
4	3-factor	0.82	0.44	0.91
	1-factor	0.83	0.46	0.88
5	3-factor	0.82	0.40	0.95
	1-factor	0.82	0.36	0.94
6	3-factor	0.82	0.42	0.91
	1-factor	0.87	0.45	0.93
7	3-factor	0.86	0.50	0.95
	1-factor	0.89	0.57	0.94
8	3-factor	0.85	0.45	0.90
	1-factor	0.89	0.64	0.96
9	3-factor	0.83	0.47	0.95
	1-factor	0.81	0.58	0.94
10	3-factor	0.82	0.58	0.92
	1-factor	0.85	0.57	0.94

Correlations among overall engagement scores across sessions are presented in Table 7. With few exceptions (specifically, sessions 1 and 5 and sessions 1 and 9), scores were significantly and positively correlated across time, suggesting that students' level of engagement was fairly consistent throughout the program.

Table 7. Correlations Among Overall Engagement Scores

Session	1	2	3	4	5	6	7	8	9	10
1		.47*	.58**	.49**	.27	.62**	.67**	.62**	.28	.46*
2			.66**	.47**	.44**	.48**	.40*	.45*	.50**	.52**
3				.58**	.46**	.69**	.73**	.73**	.52**	.67**
4					.75**	.80**	.64**	.76**	.78**	.74**
5						.66**	.60**	.66**	.80**	.77**
6							.84**	.81**	.70**	.74**
7								.86**	.72**	.86**
8									.68**	.79**
9										.86**
10										

Note. *$p < .01$. ** $p < .001$

Descriptive statistics for engagement across all ten sessions are presented in Table 8. An examination of the reliabilities of this 12-item measure of overall engagement revealed that this scale demonstrated good internal consistency, as the alpha for each session was greater than 0.85 (see Table 8). Based on the findings described above, the overall measure of engagement was used in the final analyses.

Table 8. Engagement Scale Descriptive Statistics and Reliabilities

Scale	Mean	SD	Skewness	α
Engagement - Session 1	3.88	0.77	-1.74	.95
Engagement - Session 2	3.97	0.60	-0.56	.86
Engagement - Session 3	3.68	0.76	-0.18	.91
Engagement - Session 4	4.03	0.73	-1.27	.93
Engagement - Session 5	3.88	0.76	-0.64	.93
Engagement - Session 6	3.80	0.86	-1.06	.95
Engagement - Session 7	3.71	0.96	-1.10	.96
Engagement - Session 8	3.75	0.92	-0.82	.96
Engagement - Session 9	3.82	0.81	-0.78	.95
Engagement - Session 10	3.76	0.80	-0.62	.95

3.3 Research Question 2

To address research question 2 - and in line with the unidimensional engagement finding from research question 1 - scale scores for the overall engagement measure were created for each student at each session by calculating the average of their responses across all 12 engagement items. Then, linear, quadratic, and cubic growth models were run to assess if there was any change over time in engagement, and if so, which approach best modeled that change. The means and variances for the quadratic and cubic terms were insignificantly different from zero, whereas the means and variances for the intercept and the mean for the slope in the linear model were significantly different from zero (see Table 9). This slope was negative, indicating that students reported being less engaged with the curriculum over time. This linear model was going to be compared to an unrestrained latent model in which the first and last session's factor loading were fixed, but this model failed to converge - even with iterations increased to 200,000.

Table 9. Engagement Growth Models

Model	Intercept		Slope		Quadratic		Cubic	
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance
Intercept-only	3.80**	0.45**						
Linear	3.89**	0.29**	-0.02*	0.00				
Quadratic	3.92**	0.26**	-0.03	0.03	0.00	0.00		
Cubic	3.83**	0.44**	-0.03†	0.00	0.00	0.00	0.00	0.00

Note. Results are unstandardized. $^{\dagger}p < .07$. $*p < .05$. $**p < .01$.

Fit indices were also examined across intercept-only, linear, cubic, and quadratic growth models for engagement and chi-square difference tests were calculated to assess relative fit among these nested models (see Table 10). None of the models met the two-index criteria outlined by Hu and Bentler (1999) when examining the RMSEA, CFI, TLI, and SRMR. Chi-square difference testing revealed that the linear model was a better fit than the intercept-only model and that the quadratic and cubic models were not better fitting than the linear model. Accordingly, the linear model was maintained and used as the basis for the remaining analyses.

Table 10. Fit Indicators for Engagement Growth Models

Model	RMSEA	CFI	TLI	SRMR	χ^2 difference[a]
Intercept-only	0.18	0.62	0.68	0.42	
Linear	0.16	0.70	0.73	0.25	26.49*
Quadratic	0.16	0.72	0.72	0.20	7.58
Cubic	0.17	0.74	0.71	0.18	4.52

Note. $*p < .05$.
[a] Satorra-Bentler scaled chi-square difference test values comparing the nested models in that row of the table and above (i.e., linear vs. intercept-only, quadratic vs. linear, cubic vs. quadratic).

Though the study sample was not large enough to investigate patterns of engagement trajectories, plots of observed individual values for a set of 20 random participants were examined to get a visual representation of students' change in engagement over the course of the *Safe Dates* program. One such plot is presented in Figure 2.

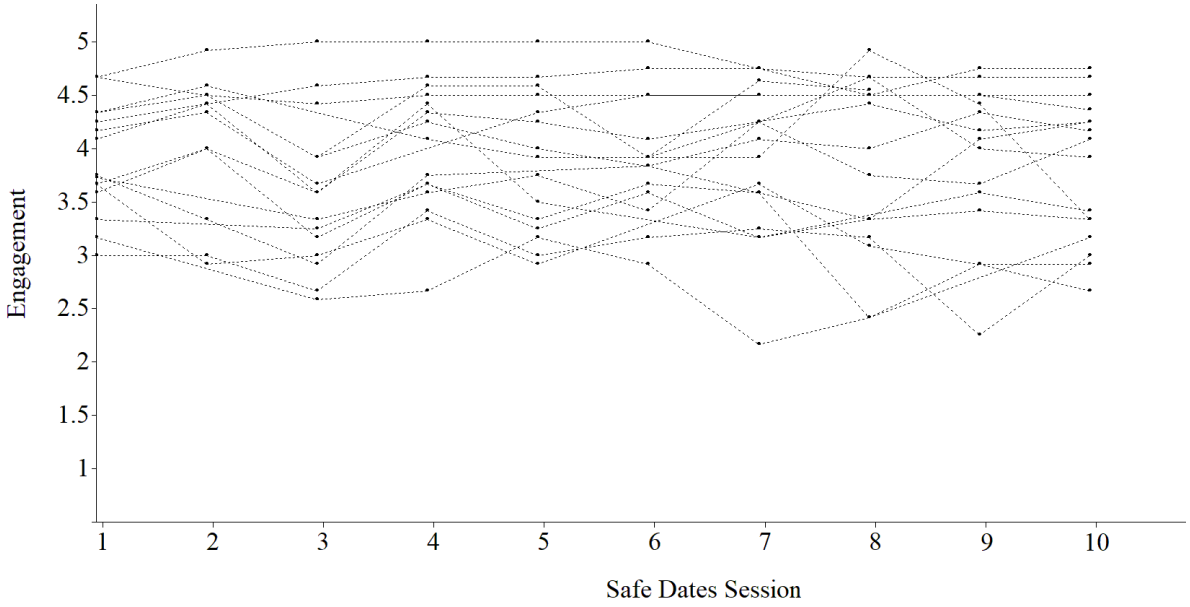

Figure 2. Observed Engagement Trajectories (n=20)

To visually represent the fit/misfit of this linear growth model of engagement, a plot of the sample means and estimated means was created (see Figure 3). An examination of this plot, and of the means for engagement presented in Table 6, raised the question of whether the negative slope in engagement was due to a significantly higher engagement in Session 4 as compared to the other sessions. A repeated measures ANOVA revealed that this was not the case, as the means at each session of engagement were not statistically significant from one another, $F(4.12, 61.85) = 0.92$, $p = 0.46$.

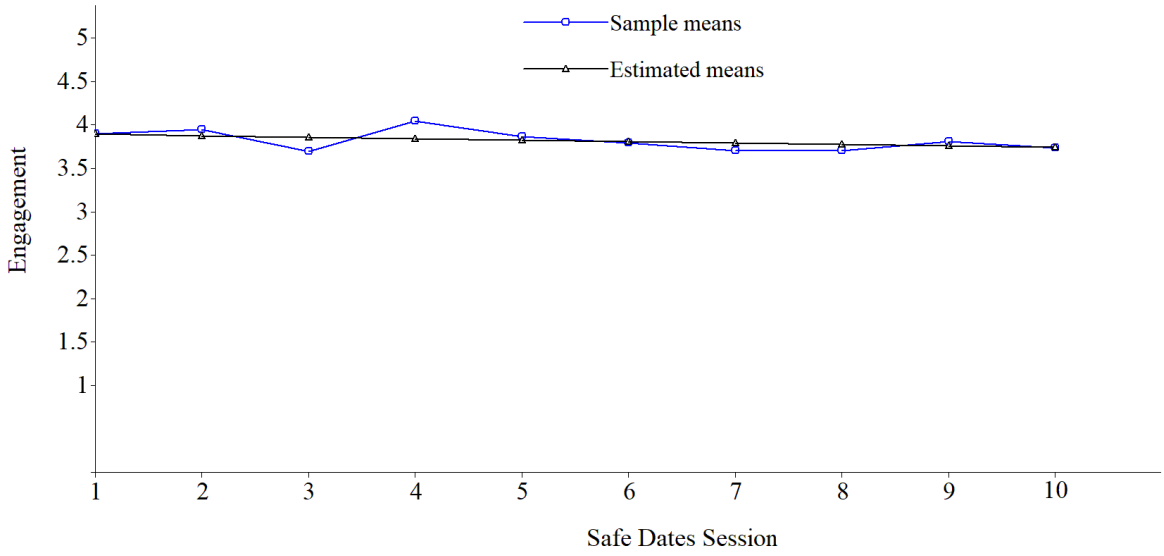

Figure 3. Sample and Estimated Means for Linear Growth Model

Each of the four outcomes (post-test attitudes toward female physical violence, male physical violence, verbal aggression, and jealous tactics) were added separately to the linear growth model. Results (see Table 11) revealed no significant effects of slope or intercept across each of these four models. It is worth noting, however, that change in engagement across time was a marginal predictor of attitudes toward female physical violence at post-test (p = .069). Perhaps unsurprisingly, given the correlations presented earlier, gender was not significantly related to any post-test attitudes except for verbal aggression. Likewise, pre-test scores on each outcome consistently predicted their respective post-test score across models.

Table 11. Linear Growth Models Predicting Post-Test Scores

Model	Estimate	SE
Female Physical Violence		
Engagement - Intercept	0.08	0.20
Engagement - Slope	-0.37†	0.19
Pre-Test	0.50**	0.13
Gender	0.12	0.12
Attendance	0.02	0.16
Male Physical Violence		
Engagement - Intercept	0.29	0.29
Engagement - Slope	-0.55	0.33
Pre-Test	0.32*	0.14
Gender	0.01	0.13
Attendance	0.04	0.19
Verbal Aggression		
Engagement - Intercept	0.06	0.20
Engagement - Slope	0.02	0.22
Pre-Test	0.37**	0.12
Gender	-0.31**	0.11
Attendance	-0.09	0.13
Jealous Tactics		
Engagement - Intercept	-0.04	0.22
Engagement - Slope	0.05	0.26
Pre-Test	0.40**	0.12
Gender	-0.09	0.13
Attendance	-0.12	0.18

Note. Results are standardized. †$p < .10$. *$p < .05$. **$p < .01$

Because of a lack of variability in attendance, only gender was examined as a potential moderator. Linear growth models with each outcome were run again, this time specifying two groups: male and female. Due to the small sample size in the group of boys (n=31), all parameters were constrained to be equal across groups except for the effects of intercept and slope of engagement on the post-test score. Results, presented in Table 10, revealed no significant effects of intercept or slope on any of the four outcomes across both groups. It is worth noting, however, that the effect of the slope of engagement on post-test attitudes toward male physical violence was marginally significant in the model for boys ($p = .079$). These models were then compared to a multigroup model where all parameters were constrained to be

equal, and chi-square difference tests based on loglikelihood values (correcting for MLR scaling factors) were calculated to assess which model best fit the data. Results, presented in Table 12, revealed that the models in which parameters were constrained to be equal across groups were a better fit of the data than those where the intercept and slope of engagement were estimated freely across groups, though there was a marginally significant chi-square value for the male physical violence model, $\chi^2(2,78) = 5.56$, $p < .10$.

Table 12. Multigroup Linear Growth Models Predicting Post-Test Scores

Model	Estimate	SE	χ^2 difference[a]
Female Physical Violence			2.48
Boys			
Engagement - Intercept	0.11	0.48	
Engagement - Slope	-0.44	0.49	
Girls			
Engagement - Intercept	0.24	0.31	
Engagement - Slope	-0.32	0.32	
Male Physical Violence			5.56†
Boys			
Engagement - Intercept	0.72	0.61	
Engagement - Slope	-0.94†	0.58	
Girls			
Engagement - Intercept	-0.05	0.35	
Engagement - Slope	-0.07	0.41	
Verbal Aggression			1.66
Boys			
Engagement - Intercept	-0.20	0.44	
Engagement - Slope	0.30	0.46	
Girls			
Engagement - Intercept	0.52	0.61	
Engagement - Slope	-0.46	0.69	
Jealous Tactics			4.59
Boys			
Engagement - Intercept	-0.69	0.62	
Engagement - Slope	0.65	0.66	
Girls			
Engagement - Intercept	0.69	0.48	
Engagement - Slope	-0.66	0.53	

Note. Results are standardized. † $p < .10$. *$p < .05$.

[a] Satorra-Bentler scaled chi-square difference test values comparing models with parameters constrained to be equal across groups to those where the intercept and slope are estimated freely for each group.

4 DISCUSSION

Student engagement (also known as participant responsiveness) has been identified as an important aspect of prevention programs, educational settings, and organized out-of-school-time (OST) involvement. Although there is evidence that engagement is related to the efficacy of a variety of types of school-based programs, there has yet to be any investigation into its role in TDV prevention specifically. Accordingly, the aims of the present study were to develop a measure of engagement that could be used with *Safe Dates*, a popular, evidence based TDV prevention program, and to examine whether students' engagement with the program was related to changes in their attitudes toward various types of dating violence.

Preliminary analyses revealed that the engagement survey measures a unidimensional construct of engagement as opposed to a three-dimensional construct as hypothesized. These findings support those of the pilot study, which also found very high correlations among the behavioral, affective, and cognitive engagement factors. This 12-item measure of engagement demonstrated good reliability across all ten sessions of the Safe Dates curriculum and represents the first examination of students' responsiveness toward the program to date. Moreover, this study represents one of the first to track engagement with a school-based prevention program over time, and even further to assess the extent to which a change in engagement is related to outcomes.

High correlations were also observed between students' attitudes toward verbal aggression and jealous tactics committed by a boy and their attitudes toward these types of violence when committed by a girl, suggesting that students' attitudes toward these types of psychological TDV were unrelated to the gender of the perpetrator. Attitudes toward male physical violence and female physical violence, while still positively correlated, were not nearly

as strongly linked with one another, indicating that these subscales should be kept distinct. These findings are in line with other research that has found adolescents to hold different attitudes toward physical TDV based on the gender of the perpetrator (Erdem & Sahin, 2017, Ruel et al., 2020).

An examination of change in engagement over the course of the program revealed that a linear growth model of engagement best fit the data, though it is worth noting that the fit statistics for this model did not meet the acceptable thresholds summarized by Hooper et al. (2008). The slope of this linear model was negative, indicating that students reported being less engaged with the program over time. Final models for each dependent variable demonstrated no significant effects of engagement intercept or slope on students' post-test attitudes toward female physical violence, male physical violence, verbal aggression, or jealous tactics, though there was a marginally significant effect of change in engagement on attitudes toward female physical violence. Although these findings did not support the hypothesis that engagement would be related to changes in attitudes toward dating violence, they do lay the groundwork for future research into engagement with school-based programs generally and with *Safe Dates* in particular.

Multigroup growth models were examined to investigate potential gender differences in the relationship between engagement and attitudes toward dating violence. Results revealed that for all four outcomes, models constraining estimates to be the same across gender fit better than those allowing the slope and intercept of engagement's influence on post-test attitudes to be freely estimated for each group (boys and girls). It is worth noting that there was a marginally significant chi-square value for the model predicting attitudes toward male physical violence, indicating that with a larger sample there may be significant gender differences in the relation

between engagement and changes in attitudes toward this type of dating violence. Research with a larger sample, and therefore larger groups of boys and girls, is needed to examine this possibility.

4.1 Implications

In terms of the implications of the present study, the 12-item engagement survey demonstrated good reliability for future research with school-based programs. Replication with a larger sample would be an ideal next step in research using this measure, as well as further investigation into the potential relationship between engagement and attendance. Results also indicated that engagement with the program declined over time, which suggests that researchers studying engagement with school-based programs should measure it at multiple time points throughout the delivery of the program. Such research would help to establish whether this phenomenon of decreasing engagement over time is a common occurrence among school-based prevention programs or if this finding is unique to *Safe Dates* or to the current sample.

With respect to Safe Dates, it is promising that students generally reported being engaged with the program across all ten sessions. This could be at least part of the reason that Safe Dates has been shown to be effective at changing attitudes and behaviors in multiple studies over the past few decades. Though engagement was unrelated to changes in attitudes toward dating violence in the current study, more research with larger samples is needed to reach a more definitive conclusion on this possibility given the marginally significant finding that change in engagement was predictive of changes in attitudes toward female physical violence. Likewise, such research would be useful in determining whether the negative change in engagement over time observed in the present study is observed in the delivery of Safe Dates with other populations. If so, this could be useful information for program facilitators who may want to

make concerted efforts to increase engagement in sessions toward the end of the program. Of course, the only way to know if these efforts are successful is to measure engagement across sessions, and this study has demonstrated a reliable way of doing so.

4.2 Limitations

As with all research studies, a few important limitations merit discussion. First, the somewhat small sample size (N=81) reduced the power of the current study and therefore the likelihood of detecting a relationship between engagement and changes in attitudes toward dating violence. The marginally significant (p = .059) finding that changes in engagement predicted post-test attitudes toward physical violence perpetrated by females, for example, would have been statistically significant with a slightly larger sample. The smaller sample also likely resulted in reduced variance with respect to attendance and potentially the other variables of interest as well, which had implications for the power to examine potential group comparisons (e.g., between high and low-attending students, among different engagement trajectories, etc.).

The way *Safe Dates* was implemented and data were collected may have contributed a few limitations as well. The requirement of parental consent to participate, for example, resulted in a participation rate that was below 50% and could have resulted in selection bias. Specifically, it is possible that students who are more likely to return signed parental consent forms are generally more engaged than students who are less likely to do so. Also, because a single facilitator delivered the curriculum to all participants included in the study, an examination of potential facilitator influences on engagement and/or changes in attitudes toward TDV was not possible. In addition to the aforementioned small sample size, the participants all came from a single high school – so one must be cautious when attempting to generalize these findings to the broader adolescent population.

Another set of limitations relate to the ways that engagement was (and was not) assessed. Because engagement surveys were administered at the end of each session and sessions were delivered during 50-minute class periods, there were often instances in which students were rushing to complete the survey before leaving for their next class. This could have reduced the accuracy of students' responses on this measure. Relatedly, another limiting factor of the current study is that engagement was not measured by any other means (e.g., observation). Having indicators of engagement from multiple sources would have made for a more complete picture of students' engagement with the *Safe Dates* curriculum.

4.3 Future Directions

The implications and limitations described above offer quite a few directions for futured research into the implementation of school-based programs. As mentioned previously, a replication of the current study that uses the engagement measure with a larger sample size would be a good start. In addition to either supporting (or refuting) the current study's finding that engagement decreased over time, such a study would also increase the power to investigate the relationship between attendance and engagement and to conduct more robust tests of gender differences in engagement, outcomes, and the relationship between the two. A larger sample would also allow for a different approach to examining change in engagement over time, such as the use of growth mixture models to investigate and compare different trajectories of engagement.

Another avenue for future research involves comparing and combining the self-report measure of engagement developed here to other methods that have recently been designed and utilized. For example, Greene and colleagues (2021) recently examined engagement in a youth substance use prevention program using three different methods. In addition to self-report, the

researchers also employed an analytic method (utilizing data on participation collected from the digital intervention) and an observational technique (coding participants' responses to open-ended questions during the program). Collecting data on engagement from multiple sources in this way would be useful in getting a more complete picture of what engagement in school-based prevention programs looks like. Relatedly, using these measures to examine class-level engagement (as opposed to individual engagement) is another interesting next step.

Another next step would be to examine other components of prevention program implementation outlined by Dane and Schneider (1998), such as adherence (i.e., fidelity), exposure (i.e., dosage), and quality of delivery, and the extent to which these are related to engagement and important program outcomes. Collecting data from students across multiple program facilitators, for example, would allow for an investigation into potential differences in engagement and outcomes of interest among different facilitators. Findings from such research could be useful in the training of program facilitators.

For *Safe Dates* specifically, examining differences in engagement and outcomes across different dosages of the curriculum is another avenue that researchers should pursue. While the standard delivery of the curriculum calls for 10 sessions, *Safe Dates* is also delivered in four- and six-session formats. Future research should determine if these shortened versions of the program are as effective as the full, 10-session program, and what (if any) effect the reduction in sessions has on changes in engagement over the course of the program.

4.4 Conclusion

In conclusion, the current study represents the first investigation into changes in engagement over time with *Safe Dates*, and one of the first in school-based TDV prevention programs more broadly. This is important because a growing body of evidence suggests that

program implementation is significantly related to the efficacy of child and adolescent prevention programming, and that engagement (or participant responsiveness) is an important, malleable component of implementation. Researchers who are designing and evaluating school-based programs should be cognizant of this and work to (a) develop curricula and activities that are engaging to the participants and (b) measure engagement over the course of the program to assess whether such efforts were successful and the extent to which this engagement is related to important program outcomes. The engagement measure developed in the current study demonstrated good reliability to be used in this research.

REFERENCES

Ackard, D. M., Eisenberg, M. E., & Neumark-Sztainer, D. (2007). Long-term impact of adolescent dating violence on the behavioral and psychological health of male and female youth. *The Journal of Pediatrics*, *151*(5), 476-481.

Ackard, D. M., & Neumark-Sztainer, D. (2002). Date violence and date rape among adolescents: Associations with disordered eating behaviors and psychological health. *Child Abuse & Neglect*, *26*(5), 455-473.

Basile K. C., Clayton, H. B., DeGue, S., et al. (2020). Interpersonal Violence Victimization Among High School Students — Youth Risk Behavior Survey, United States, 2019. MMWR Supplements, 69(1), 28–37.

Bell, K. M., & Naugle, A. E. (2008). Intimate partner violence theoretical considerations: Moving towards a contextual framework. *Clinical Psychology Review*, *28*(7), 1096-1107.

Berkel, C., Mauricio, A. M., Schoenfelder, E., & Sandler, I. N. (2011). Putting the pieces together: An integrated model of program implementation. *Prevention Science, 12*(1), 23–33.

Bonache, H., Gonzalez-Mendez, R., & Krahé, B. (2017). Romantic attachment, conflict resolution styles, and teen dating violence victimization. *Journal of Youth & Adolescence*, *46*(9), 1905–1917.

Bonomi, A. E., Anderson, M. L., Nemeth, J., Rivara, F. P., & Buettner, C. (2013). History of dating violence and the association with late adolescent health. *BMC Public Health*, *13*(1), 1-12.

Centers for Disease Control (CDC, 2022). Preventing Teen Dating Violence. Retrieved from https://www.cdc.gov/violenceprevention/pdf/ipv/TDV-factsheet_2022.pdf

Charlebois, P., Brendgen, M., Vitaro, F., Normandeau, S., & Boudreau, J. (2004). Examining dosage effects on prevention outcomes: Results from a multi-modal longitudinal preventive intervention for young disruptive boys. *Journal of School Psychology, 42*(3), 201-220.

Christenson, S. L., Reschly, A. L., & Wylie, C. (2012). *Handbook of research on student engagement*. New York, NY, US: Springer Science + Business Media.

Crooks, C. V., Chiodo, D., Zwarych, S., Hughes, R., & Wolfe, D. A. (2013). Predicting implementation success of an evidence-based program to promote healthy relationships among students two to eight years after teacher training. *Canadian Journal of Community Mental Health, 32*(1), 125-138.

Cutbush, S., Williams, J., Miller, S., Gibbs, D., & Clinton-Sherrod, M. (2021). Longitudinal patterns of electronic teen dating violence among middle school students. *Journal of Interpersonal Violence, 36*(5/6), 2506-2526.

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: are implementation effects out of control?. *Clinical Psychology Review, 18*(1), 23-45.

Datta, P., Cornell, D., & Konold, T. (2022). Association of teen dating aggression with risk behavior and academic adjustment. *Journal of Interpersonal Violence, 37*(7/8), NP3930-NP3953.

De La Rue, L., Polanin, J. R., Espelage, D. L., & Pigott, T. D. (2017). A meta-analysis of school-based interventions aimed to prevent or reduce violence in teen dating relationships. *Review of Educational Research, 87*(1), 7-34.

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*, *41*(3/4), 327–350.

Erdem, A., & Sahin, R. (2017). Undergraduates' attitudes toward dating violence: Its relationship with sexism and narcissism. *International Journal of Higher Education*, *6*(6), 91–105.

Exner-Cortens, D., Eckenrode, J., & Rothman, E. (2013). Longitudinal associations between teen dating violence victimization and adverse health outcomes. *Pediatrics, 131*(1), 71-78.

Foshee, V. A., Linder, G. F., Bauman, K. E., Langwick, S. A., Arriaga, X. B., Heath, J. L., & ... Bangdiwala, S. (1996). The Safe Dates Project: Theoretical basis, evaluation design, and selected baseline findings. *American Journal of Preventive Medicine, 12*(5, Suppl), 39-47.

Foshee, V. A., Bauman, K. E., Arriaga, X. B., Helms, R. W., Koch, G. G., & Linder, G. F. (1998). An evaluation of Safe Dates, an adolescent dating violence prevention program. *American Journal of Public Health, 88*(1), 45-50.

Foshee, V. A., Bauman, K. E., Greene, W. F., Koch, G. G., Linder, G. F., & MacDougall, J. E. (2000). The Safe Dates Program: 1-Year Follow-Up Results. *American Journal of Public Health, 90*(10), 1619-1622.

Foshee, V., Bauman, K., Ennett, S., Linder, G., Benefield, T., & Suchindran, C. (2004). Assessing the long-term effects of the Safe Dates program and a booster in preventing and reducing adolescent dating violence victimization and perpetration. *American Journal of Public Health, 94*(4), 619-624.

Foshee, V. A., Bauman, K. E., Ennett, S. T., Suchindran, C., Benefield, T., & Linder, G. F. (2005). Assessing the effects of the dating violence prevention program 'Safe Dates' using random coefficient regression modeling. *Prevention Science*, *6*(3), 245-258.

Foshee, V. A., Linder, F., MacDougall, J. E., & Bangdiwala, S. (2001). Gender differences in the longitudinal predictors of adolescent dating violence. *Preventive Medicine: An International Journal Devoted to Practice and Theory*, *32*(2), 128-141.

Fredricks, J. A., Blumenfeld, P., Friedel, J., & Paris, A. (2005). School Engagement. In K. A. Moore, L. H. Lippman, K. A. Moore, L. H. Lippman (Eds.), *What do children need to flourish: Conceptualizing and measuring indicators of positive development* (pp. 305-321). New York, NY, US: Springer Science + Business Media.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). Student engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109.

Goncy, E. A., Sullivan, T. N., Farrell, A. D., Mehari, K. R., & Garthe, R. C. (2017). Identification of patterns of dating aggression and victimization among urban early adolescents and their relations to mental health symptoms. *Psychology of Violence*, *7*(1), 58–68.

Greene, K., Choi, H. J., Glenn, S. D., Ray, A. E., & Hecht, M. L. (2021). The role of engagement in effective, digital prevention interventions: The function of engagement in the REAL media substance use prevention curriculum. *Prevention Science : The Official Journal of the Society for Prevention Research*, *22*(2), 247–258.

Hansen, W. B., Fleming, C. B., & Scheier, L. M. (2019). Self-reported engagement in a drug prevention program: Individual and classroom effects on proximal and behavioral outcomes. *The Journal of Primary Prevention*, *40*, 5-34.

Holt, M. K., & Espelage, D. L. (2005). Social support as a moderator between dating violence victimization and depression/anxiety among African American and Caucasian adolescents. *School Psychology Review, 34*(3), 309-328.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53–59.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Josephson, W. L., & Proulx, J. B. (2008). Violence in young adolescents' relationships: A path model. *Journal of Interpersonal Violence, 23*(2), 189–208.

Karlsson, M. E., Temple, J. R., Weston, R., & Le, V. D. (2016). Witnessing interparental violence and acceptance of dating violence as predictors for teen dating violence victimization. *Violence Against Women, 22*(5), 625–646.

King, D. M., Hatcher, S. S., Blakey, J. M., & Mbizo, J. (2015). Health-risk behaviors and dating violence victimization: An examination of the associated risk behaviors among detained female youth. *Social Work in Public Health, 30*(7), 559–566.

Lindsey, M. A., Romanelli, M., Ellis, M. L., Barker, E. D., Boxmeyer, C. L., & Lochman, J. E. (2019). The influence of treatment engagement on positive outcomes in the context of a school-based intervention for students with externalizing behavior problems. *Journal of Abnormal Child Psychology, 47*(9), 1437–1454.

Low, S., Van Ryzin, M. J., Brown, E. C., Smith, B. H., & Haggerty, K. P. (2014). Engagement matters: lessons from assessing classroom implementation of steps to respect: a bullying prevention program over a one-year period. *Prevention Science, 15*(2), 165-176.

Orpinas, P., Hsieh, H.-L., Song, X., Holland, K., & Nahapetyan, L. (2013). Trajectories of physical dating violence from middle to high school: Association with relationship quality and acceptability of aggression. *Journal of Youth and Adolescence, 42*(4), 551–565.

Peskin, M., Markham, C., Shegog, R., Temple, J., Baumler, E., Addy, R., … Emery, S. (2017). Prevalence and correlates of the perpetration of cyber dating abuse among early adolescents. *Journal of Youth & Adolescence*, *46*(2), 358–375.

Reidy, D. E., Berke, D. S., Gentile, B., & Zeichner, A. (2014). Man enough? Masculine discrepancy stress and intimate partner violence. *Personality & Individual Differences*, *68*, 160–164.

Reyes, H. L. M., Foshee, V. A., Niolon, P. H., Reidy, D. E., & Hall, J. E. (2016). Gender role attitudes and male adolescent dating violence perpetration: Normative beliefs as moderators. *Journal of Youth and Adolescence*, *45*(2), 350–360.

Roberts, T. A., Klein, J. D., & Fisher, S. (2003). Longitudinal effect of intimate partner abuse on high-risk behavior among adolescents. *Archives of Pediatrics & Adolescent Medicine*, *157*(9), 875-881.

Rose-Krasnor, L. (2009). Future Directions in Youth Involvement Research. *Social Development*, *18*(2), 497-509.

Ruel, C., Lavoie, F., Hébert, M., & Blais, M. (2020). Gender's role in exposure to interparental violence, acceptance of violence, self-efficacy, and physical teen dating violence among Quebec adolescents. *Journal of Interpersonal Violence*, *35*(15–16), 3079–3101.

Satorra, A., & Bentler, P.M. (2010). Ensuring positiveness of the scaled difference chi-square test statistic. *Psychometrika*, *75*, 243-248.

Shen, A. C. (2011). Cultural barriers to help-seeking among Taiwanese female victims of dating violence. *Journal of Interpersonal Violence, 26*(7), 1343–1365.

Shorey, R. C., Cornelius, T. L., & Bell, K. M. (2008). Behavioral theory and dating violence: A framework for prevention programming. *The Journal of Behavior Analysis of Offender and Victim Treatment and Prevention, 1*(4), 1-13.

Silverman, J. G., Raj, A., Mucci, L. A., & Hathaway, J. E. (2001). Dating violence against adolescent girls and associated substance use, unhealthy weight control, sexual risk behavior, pregnancy, and suicidality. *JAMA: Journal of The American Medical Association, 286*(5), 572-612.

Smith-Darden, J. P., Kernsmith, P. D., Reidy, D. E., & Cortina, K. S. (2017). In search of modifiable risk and protective factors for teen dating violence. *Journal of Research on Adolescence, 27*(2), 423-435.

Slep, A. M. S., Cascardi, M., Avery-Leaf, S., & O'Leary, K. D. (2001). Two new measures of attitudes about the acceptability of teen dating aggression. *Psychological Assessment, 13*(3), 306-318.

Steiger, J.H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences, 42*(5), 893-98.

Temple, J. R., Shorey, R. C., Tortolero, S. R., Wolfe, D. A., & Stuart, G. L. (2013). Importance of gender and attitudes about violence in the relationship between exposure to interparental violence and the perpetration of teen dating violence. *Child Abuse & Neglect, 37*(5), 343–352.

Temple, J. R., Choi, H. J., Elmquist, J., Hecht, M., & Miller-Day, M. (2016). Psychological abuse, mental health, and acceptance of dating violence among adolescents. *Journal of Adolescent Health*, *59*(2), 197-202.

van Dulmen, M. v., Klipfel, K. M., Mata, A. D., Schinka, K. C., Claxton, S. E., Swahn, M. H., & Bossarte, R. M. (2012). Cross-lagged effects between intimate partner violence victimization and suicidality from adolescence into adulthood. *Journal of Adolescent Health*, *51*(5), 510-516.

Weiss, H. B., Little, P. D., & Bouffard, S. M. (2005). More than just being there: balancing the participation equation. *New Directions for Youth Development*, (105), 15.

Wilson, S. J., Lipsey, M. W., & Derzon, J. H. (2003). The effects of school-based intervention programs on aggressive behavior: a meta-analysis. *Journal of Consulting and Clinical Psychology*, *71*(1), 136-149.

Wincentak, K., Connolly, J., & Card, N. (2017). Teen dating violence: A meta-analytic review of prevalence rates. *Psychology of Violence*, *7*(2), 224-241.

Wolfe, D. A., Crooks, C., Jaffe, P., Chiodo, D., Hughes, R., Ellis, W., & Donner, A. (2009). A school-based program to prevent adolescent dating violence: A cluster randomized trial. *Archives of Pediatrics & Adolescent Medicine*, *163*(8), 692-699.

APPENDICES

Appendix A Measures

Appendix A.1 Engagement Survey

Date: _____ Session: ____ Class Period: _____ Name: _____

DIRECTIONS: Please write today's date, the Safe Dates session number (1-10), and your class period.

Answer each questions about today's lesson. There are no wrong answers. You may skip any questions you do not want to answer.

		Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1.	I paid attention during today's lesson.	O	O	O	O	O
2.	I finished all the activities for today's lesson.	O	O	O	O	O
3.	I took part in class discussion during today's lesson.	O	O	O	O	O
4.	I was an active participant in today's lesson.	O	O	O	O	O
5.	I had fun during today's lesson.	O	O	O	O	O
6.	I enjoyed today's lesson.	O	O	O	O	O
7.	I felt excited by today's lesson.	O	O	O	O	O
8.	I think today's lesson was interesting.	O	O	O	O	O
9.	I focused on what was being taught in today's lesson.	O	O	O	O	O
10.	I will seek out more information on today's topic(s) on my own.	O	O	O	O	O
11.	I made connections between what we talked about today and things in my own life.	O	O	O	O	O
12.	I will talk about what we learned today with someone outside of this class.	O	O	O	O	O

Appendix A.2 Pre/Post-Test

DIRECTIONS: Please answer the questions below. Your answers will be kept confidential. You may skip any questions you do not want to answer.

Below is a list of situations and peoples' reactions to them.
How much do you agree or disagree with the reaction that is underlined?

		Strongly agree	Agree	Somewhat Agree	Somewhat disagree	Disagree	Strongly Disagree
1.	David is following Maria and won't leave her alone. Maria pushes him out of her way.	O	O	O	O	O	O
2.	Tom and Yolanda are having an argument. Things are getting out of hand and Tom starts pushing and shoving Yolanda. When he won't stop, Yolanda slaps him.	O	O	O	O	O	O
3.	Tony is harassing Gina about her new haircut, saying she looks like a poodle. Gina gets really angry at Tony and pushes him.	O	O	O	O	O	O
4.	Jeff finds out that Debbie has been seeing someone else behind his back. He gets really mad and he slaps her.	O	O	O	O	O	O
5.	Karen is teasing Frank at a party about being too stupid to pass English. When she won't stop, Frank just loses it and hits Karen.	O	O	O	O	O	O
6.	Mark calls Tina a slut in front of her friends. Tina slaps him.	O	O	O	O	O	O
7.	Lisa won't stop making fun of Charlie in front of their friends. Charlie loses his temper and pushes her.	O	O	O	O	O	O
8.	Peter gets really angry at Patti and slaps her when she threatens to break up with him.	O	O	O	O	O	O

How justified are each of these things?	1. Justified in MANY situations	3. Justified in a FEW situations	5. Not justified NO MATTER WHAT
	2. Justified in SOME situations	4. Justified only in EXTREME situations	

		For Females?					**For Males?**				
		1	2	3	4	5	1	2	3	4	5
9.	Insulting or swearing at boyfriend/girlfriend	O	O	O	O	O	O	O	O	O	O
10.	Stomping out of the room or house	O	O	O	O	O	O	O	O	O	O
11.	Doing or saying something to spite him/her	O	O	O	O	O	O	O	O	O	O
12.	Being jealous and suspicious of his/her friends	O	O	O	O	O	O	O	O	O	O
13.	Being jealous of other girls/boys	O	O	O	O	O	O	O	O	O	O
14.	Checking up on him/her, making him/her say where he/she was	O	O	O	O	O	O	O	O	O	O
15.	Accusing him/her of seeing another girl/boy	O	O	O	O	O	O	O	O	O	O

Appendix B Safe Dates Curriculum

Session	Title	Description
1	Defining Caring Relationships	Students are introduced to Safe Dates and discuss how they wish to be treated in dating relationships.
2	Defining Dating Abuse	Discussing scenarios and statistics, students clearly define dating abuse.
3	Why Do People Abuse?	Students identify the causes and consequences of dating abuse through large- and small-group scenario discussions.
4	How to Help Friends	Students learn why it is difficult to leave abusive relationships and how to help an abused friend through a decision-making exercise and dramatic reading.
5	Helping Friends	Students use stories and role-playing to practice skills for helping abused friends or for confronting abusing friends.
6	Overcoming Gender Stereotypes	Students learn about gender stereotypes and how they affect dating relationships through a writing exercise, scenarios, and small-group discussions.
7	Equal Power Through Communication	Students learn the eight skills for effective communication and practice them in role-plays.
8	How We Feel. How We Deal	Students learn effective ways to recognize and handle anger through a diary and a discussion of “hot buttons,” so that anger does not lead to abusive behavior.
9	Preventing Sexual Assault	Students learn about sexual assault and how to prevent it through a quiz, a caucus, and a panel of peers.
10	Poster Contest	Students design and create posters to demonstrate what they learned in the program.