

Attitudes Toward Intimate Partner Violence in Dating Relationships

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Prevention of intimate partner violence on college campuses includes programs designed to change attitudes, and hence, a scale that assesses such attitudes is needed. Study 1 ($N = 859$) cross validates the factor structure of the Intimate Partner Violence Attitude Scale—Revised using exploratory factor analysis and presents initial validity data on the scale. In Study 2 ($N = 687$), the obtained three-factor structure (Abuse, Control, Violence) is tested using confirmatory factor analysis, and it is shown to be concurrently related to assault in romantic relationships and to predict psychological aggression 14 weeks later. The findings are discussed in the context of how understanding and modifying attitudes assessed by the Intimate Partner Violence Attitude Scale—Revised may improve interventions aimed at reducing intimate partner violence.

Keywords: psychological abuse, conflict behavior, attitudes, intimate partner violence

With 5.3 million incidents of intimate partner violence (IPV) against women each year, and 3.2 million against men, IPV is a substantial public health problem in the United States. This violence results in nearly 2.0 million injuries and 1,300 deaths annually (Centers for Disease Control, 2007). In addition to the human suffering caused and the untold intangible costs, it is estimated that the economic costs of IPV amount to \$5.8 billion each year (Arias & Corso, 2005).

It would be incorrect to believe that IPV is limited to more established intimate relationships, such as marriage or cohabitation. Since Makepeace (1981) published the first study of physical intimate partner violence in dating relationships, many studies have documented the widespread prevalence of dating IPV in Canada and the United States. Estimates of the prevalence of violence in college student dating relationships vary from 13% to 74% (e.g., Daley & Noland, 2001; Spencer & Bryant, 2000; Zweig, Barber, & Eccles, 1997), but the most consistent prevalence rates range from about 20% to 33% (Smith, Thompson, Tomaka, & Buchanan, 2005). For example, in a recent study, 34% of college students in dating relationships reported the occurrence of physical aggression in the relationship over the past 12 months (Straus & Ramirez, 2002). This replicates numerous findings that show that approximately one third of high school and college students have experienced dating IPV, as perpetrators and/or victims, at one or more times in their dating history (e.g., Arias, Samios, & O'Leary, 1987; Bergman, 1992; Bookwala, Frieze, Smith, & Ryan, 1992; Foo & Margolin, 1995; Jezl, Molidor, & Wright, 1996; White & Koss, 1991).

Intimate partner violence among college students is not a problem limited to North America. In a study of 31 university samples in 16 countries, Straus (2004) found that at the median university, 29% of the students physically assaulted a dating partner in the previous 12 months (range = 17–45%). The significance of IPV among college students worldwide is further emphasized by two observations. First, dating IPV can result in physical injury and medical attention-seeking (e.g., Makepeace, 1986) and is associated with psychological distress (e.g., Coffey, Leitenberg, Henning, Bennett, & Jankowski, 1996), low grade-point average (e.g., Bergman, 1992), disciplinary problems (e.g., Reuterman & Burcky, 1989), and rapid-repeat pregnancies (e.g., Jacoby, Gorenflo, Black, Wunderlich, & Eyler, 1999). Second, dating IPV appears to be a precursor of marital IPV. For example, O'Leary et al. (1989) noted that physical assault during courtship increases the likelihood of marital violence. The relationship between dating IPV among college students and marital IPV is important in light of the fact that about 30% of dating couples in college find themselves married within 5 years (Sprecher, 1999).

Although it is widely believed that IPV represents primarily violence against women, data from over 100 surveys of family problems and conflicts show that “women are as physically aggressive, or more aggressive, than men in their relationships. The aggregate sample size in the reviewed studies exceeds 58,000” (Fiebert, 1997, p. 273; see also Archer, 2000).¹ With regard to dating, the international study mentioned earlier showed that a larger percentage of women than men physically assaulted their partner in 21 of the 31 samples, which “confirms internationally a pattern that has been found in many studies of students at U. S.

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¹ The issue of whether IPV is primarily perpetrated by men has been controversial. Data from police reports, criminal victimization surveys, and shelter samples show that men overwhelmingly perpetrate IPV (70–95%; Straus & Ramirez, 2002). This stands in stark contrast to data from community sample surveys, which are more comparable to the data reported in this study. The reasons for this discrepancy have been discussed by Straus (1979).

universities" (Straus, 2004, p. 799). It is perhaps surprising that this gender pattern held also for severe assaults and only reversed when injuries from the assaults were considered: Men caused a higher percentage of injuries than did women in 18 of the 31 samples.

In light of such evidence, it is not surprising that attention has turned to the prevention of IPV among young adults and among women. A violence-prevention intervention that is being used in the United States by colleges and universities is the social-norms approach (Berkowitz, 2003a, 2003b; Cornelius & Resseguie, 2007), an approach that has been widely used in alcohol- and drug-abuse prevention programs. Fundamental to this approach is the view that norms reflected in attitudes and behaviors regulate group members' actions to perpetuate the collective norm. Accordingly, interventions typically involve assessing attitudes and/or behavior in the community of interest and then providing the information obtained to the community in the service of providing accurate information to combat misperceptions of attitudes/behaviors in the community. As Graffunder, Noonan, Cox, and Wheaton (2004) noted, such misperceptions are important for at least two reasons. First, perceived peer pressure to conform might discourage students from challenging offensive or hurtful peer behavior. Second, misperceptions might also serve to pressure college students to conform to a false norm.

In light of these observations, one might expect a plethora of instruments to assess students' attitudes towards IPV. Surprisingly, however, Smith et al. (2005) reported that "Only a handful of studies has examined college students' attitudes toward violence in intimate relationships" (p. 445), with researchers focusing mainly on "prevalence and severity of IPV and, only secondarily, on attitudes toward violence" (p. 446). One notable example is the International Dating Violence Study, which focused on IPV rates but also incidentally showed that the higher the endorsement rate of an attitude item condoning physical aggression ("I can think of a situation when I would approve of a husband slapping a wife's face"), the higher the percentage of students on campus who assaulted a dating partner (holding constant scores on a social desirability measure; Straus, 2004). In a similar vein, Deal and Wampler (1986) asked college students to rate the appropriateness of behaviors on the then most widely used scale of IPV (Conflict Tactics Scale; Straus, 1979) and showed that accepting attitudes toward violence were related to violence in the most recent or current dating relationship. Cate, Henton, Koval, Christopher, and Lloyd (1982) had college students complete six semantic differential items concerning "how good it felt to slap a partner" and also documented a relationship between attitudes toward IPV and its occurrence. Although limited, such data suggest that addressing the problem of IPV may require paying attention to attitudes.

As indicated above, systematic attempts to develop a measure of attitudes toward IPV are notably absent from the research literature. Thus, the goal of the present research was to develop such a measure building on the work of a recent attempt to assess attitudes toward IPV. Smith et al. (2005) set out to develop a measure of attitudes toward IPV for college students by drawing on the Centers for Disease Control and Prevention definition of IPV as actual or threatened physical or sexual violence, or psychological and emotional abuse, directed toward a partner. They derived a pool of potential items reflecting the construct of violence in intimate relationships from a review of research on the prevalence

and severity of behaviors that represented psychological and verbal abuse, control, and physical violence in such relationships. They then developed parallel attitudinal items. After this exercise and examination of items by expert judges, they administered a questionnaire to 333 college students, most of whom were Mexican American (65%). Principal-components analyses yielded three factors: Abuse, Control and Violence. Unfortunately, this study was limited by the failure to cross validate the factors and by the absence of validity data. The authors did, however, document that attitudes did not differ across Mexican American and non-Hispanic White students. To address these issues, in the present studies, we used large samples to (a) replicate and cross validate the factor structure found by Smith et al., (b) subject it to evaluation via confirmatory factor analysis, and (c) provide data on its concurrent and predictive validity.

Study 1

The goal of Study 1 was twofold. The first goal was to examine whether we could find the same factor structure as Smith et al. (2005) using a larger sample of students. We also sought to cross validate the factor structure that emerged. The second goal was to provide initial validity data for a measure of attitudes toward IPV. Specifically, we examined whether positive attitudes toward IPV would be concurrently related to the dysfunctional relationship belief that disagreement is destructive. It is well documented that believing disagreement is destructive is associated with poorer relationship functioning (Eidelson & Epstein, 1982; Fincham, 1994). We also examined the concurrent and predictive validity of attitudes toward IPV in relation to reported conflict behavior.

Two important controls were used in examining these relations. First, IPV is a sensitive topic and, therefore, is susceptible to socially desirable responding. Consequently, we included an assessment of social desirability, defined as "the need of Ss [respondents] to obtain approval by responding in a culturally appropriate and acceptable manner" (Crowne & Marlowe, 1960, p. 353). Second, in research on relationships, it is often useful to require that constructs do more than capture variance in commonly used measures of relationship satisfaction. Absent such a requirement, measures of relationship relevant constructs may simply function as a proxy index of relationship satisfaction. A measure of relationship satisfaction is therefore included in the study.

Method

Participants

Participants were 859 students (697 female, 162 male) in an introductory course on families across the lifespan. This class meets university liberal studies requirements in social sciences, so students potentially represent all colleges and majors on campus. Within our sample, the largest representations were from exercise science (24%), merchandising (9%), education (8%), psychology (7%), biological sciences (6%), and nursing (5%). Their mean age was 19.3 years ($SD = 1.75$). Seventy percent of the sample was White, 13% was African American, 7% was Latino, and the remainder indicated mixed race, Asian, or "other." Approximately 52% ($n = 443$) were in heterosexual romantic relationships. On

average, these relationships had lasted 7–12 months at the time of the initial assessment.

Procedure

Students in the class were offered multiple options to earn extra credit for the class. One of the options, approved by the Florida State University Institutional Review Board, was to complete the measures used in this study. Before doing so, they read a consent form explaining the voluntary nature of the participation and were told that the instructor in the course was not one of the researchers conducting the survey. Students who agreed to participate completed all the measures described in an initial survey. Fourteen weeks later, they again completed the measure of conflict behavior.

Measures

Disagreement is destructive. We used the disagreement is destructive subscale from the Relationship Beliefs Inventory (Eidelson & Epstein, 1982) to assess inappropriate relationship beliefs that have been shown to contribute to relationship difficulties (see Bradbury & Fincham, 1993). It comprises eight items that reflect the view that disagreement between relationship partners is maladaptive (e.g., “if your partner expresses disagreement with your ideas, s/he probably does not think highly of you,” “when my partner and I disagree, I feel like our relationship is falling apart”), each of which was answered on a 5-point scale ranging from *very false* to *very true* ($\alpha = .78$ in the present sample).

Constructive conflict behavior. Constructive conflict behavior was assessed using the Communication Patterns Questionnaire constructive communication subscale (CPQ-CC; Heavey, Larson, Zumtobel, & Christensen, 1996). The CPQ-CC was chosen because it is highly correlated with observed problem-solving behavior during couple discussions ($r = .70$; Hahlweg, Kaiser, Christensen, Fehm-Wolfsdorf, & Groth, 2000). The CPQ-CC is a seven-item subscale that assesses the interaction patterns of couples during conflict. It assesses three constructive communication behaviors (mutual discussion, mutual expression, mutual negotiation) and three destructive communication behaviors (mutual blame, mutual threat, and each partner’s verbal aggression). The total score for the measure is obtained by subtracting the summed value of the destructive communication items from the sum of the constructive communication items; thus, higher scores indicate more constructive communication. In the present sample, $\alpha = .80$ at Time 1 and $\alpha = .84$ at Time 2.

Relationship satisfaction. Starting with 180 items previously used to assess relationship satisfaction, Funk and Rogge (2007) conducted an item-response theory analysis to develop a four-item measure of relationship satisfaction with optimized psychometric properties. Sample items include, “How rewarding is your relationship with your partner?” (answered on a 6-point scale ranging from *not at all* to *extremely*) and “I have a warm and comfortable relationship with my partner” (answered on a 6-point scale ranging from *not at all true* to *very true*). Their measure correlates .87 with the widely used Dyadic Adjustment Scale (Spanier, 1976) and $-.79$ with the Ineffective Arguing Inventory (Kurdek, 1994). Coefficient α in the present sample was .92.

Social desirability. Social desirability is particularly relevant to the constructs assessed in this study. We therefore included a

13-item scale adapted from the Reynolds short form of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) that has been used in prior research on college student relationships (e.g., Straus, 2004). The scale was scored so that higher scores indicate more socially desirable responding. Coefficient α for this scale in the present sample was .69.

Intimate Partner Violence Attitude Scale. The Intimate Partner Violence Attitude Scale (IPVAS; Smith et al., 2005) was administered at Time 1. The scale includes three factors found in the original study, abuse (e.g., “As long as my partner doesn’t hurt me, ‘threats’ are excused”), control (e.g., “It is okay for me to tell my partner not to talk to someone of the opposite sex”), and violence (e.g., “It would not be appropriate to ever kick, bite, or hit a partner with one’s fist”). All items were answered on a 5-point scale, ranging from *strongly disagree* to *strongly agree*. One item that included the word “egotistical” proved to be problematic and was not included in subsequent analyses, leaving a total of 22 items.

Results

Prior to implementing data-reduction techniques, we examined the 22 items of the IPVAS. Two of the items were highly skewed (“Using a knife or gun on a partner is never appropriate,” “Threatening a partner is ok as long as I don’t hurt him or her”) and were omitted from subsequent analyses. Owing to the large number of respondents, the sample was split into two subsamples. We did this to allow ourselves to cross validate our findings.

A principal-components analysis was conducted on each of the two subsamples. In both analyses, three principal components with an eigenvalue greater than 1.0 were extracted that together accounted for a majority of the variance in each subsample, 52.9% and 54.0%, respectively (see Table 1). The components replicated exactly those found by Smith et al. (2005). With three exceptions, the items loaded cleanly on a single factor (loading = .50 or greater) in both subsamples and did not have any cross loadings greater than .35. Two of the three exceptions (Items 3 and 5) were items that had showed low loadings ($<.40$) on their primary factor in Smith et al.’s original analysis. The third (Item 19) performed acceptably in one analysis but not the other. These three items were therefore dropped, leaving a measure that comprised 17 items. The items were unit weighted and then summed to create the abuse (eight items, $\alpha = .91$), violence (four items, $\alpha = .77$), and control (five items, $\alpha = .71$) subscales that had been identified.

The concurrent relations among the measures used to assess validity were examined by computing Pearson product-moment correlations separately for men and women, and following conversion to z scores, possible gender differences were examined. None of the correlations varied reliably by gender. Table 2 shows concurrent correlations for the portion of the sample in romantic relationships at the time of the initial assessment. It is interesting that the correlations with socially desirable responding were relatively low and statistically significant only for the abuse and control subscales. Unexpectedly, the association between IPVAS subscales and relationship satisfaction was also relatively low, a circumstance that may reflect restricted variance on the satisfaction measure owing to relatively high levels of satisfaction reported in dating relationships.

As anticipated, all three IPVAS subscales correlated positively with the relationship belief that disagreement is destructive. Al-

Table 1
Subscales and Factor Loadings

Item	Sample A factor loading			Sample B factor loading		
	1	2	3	1	2	3
1. Abuse						
10. As long as my partner doesn't hurt me, "threats" are excused.	.71	.05	.08	.66	.15	.07
11. During a heated argument, it is okay for me to bring up something from my partner's past to hurt him or her.	.73	.08	.03	.79	-.01	-.03
13. I think it helps our relationship for me to make my partner jealous.	.77	-.01	.04	.75	-.10	.15
6. I don't mind my partner doing something just to make me jealous.	.68	.05	.04	.73	.05	.02
22. During a heated argument, it is okay for me to say something just to hurt my partner on purpose.	.80	.04	-.05	.79	-.06	.06
14. It is no big deal if my partner insults me in front of others.	.74	.13	-.08	.75	.10	-.05
21. It is okay for me to accept blame for my partner doing bad things.	.78	-.11	.01	.69	.01	.11
4. It is okay for me to blame my partner when I do bad things.	.72	-.06	.13	.77	-.10	.10
3. It is not appropriate to insult my partner in front of others.	.45	.31	.03	.48	.32	-.06
5. It is not acceptable for my partner to bring up something from the past to hurt me.	.31	.24	.13	.34	.41	-.15
2. Violence						
23. It would never be appropriate to hit or try to hit one's partner with an object.	-.01	.66	.20	-.10	.75	.14
20. It would not be appropriate to ever kick, bite, or hit a partner with one's fist.	-.03	.75	.01	-.02	.77	.05
16. Threatening a partner with a knife or gun is never appropriate.	.25	.64	-.13	.18	.65	-.03
17. I think it is wrong to ever damage anything that belongs to a partner.	.21	.70	-.05	.12	.66	.10
3. Control						
12. I would never try to keep my partner from doing things with other people.	-.19	.35	.69	-.10	.31	.63
1. I would be flattered if my partner told me not to talk to someone of the other sex.	.13	-.19	.66	.05	-.18	.72
9. I would not stay with a partner who tried to keep me from doing things with other people.	.06	.32	.54	.09	.28	.50
15. It is okay for me to tell my partner not to talk to someone of the opposite sex.	.27	-.06	.60	.21	-.07	.72
2. I would not like for my partner to ask me what I did every minute of the day.	.04	-.03	.59	-.01	.11	.58
19. I think my partner should give me a detailed account of what he or she did during the day.	.34	-.01	.41	.30	-.04	.59
% of variance	38.2	7.9	6.8	37.4	8.8	7.8
Eigenvalue	7.6	1.6	1.4	7.5	1.8	1.6
Total variance		52.9%			54.0%	

though the correlations decreased slightly in magnitude when socially desirable responding and relationship satisfaction were controlled, neither the pattern of the relations nor their level of significance changed. Also as expected, constructive conflict behavior was inversely related to the IPVAS attitudes concerning abuse, violence, and control. Again, correlations decreased only slightly when socially desirable responding and relationship satisfaction were controlled.

Having provided initial data on concurrent validity, we turned next to predictive validity and considered whether attitudes toward IPV predicted future behavior. This was done in two ways. First, for respondents who remained in their romantic relationship at both time points, we examined whether abuse, control, and violence attitude scores predicted constructive conflict behavior 14 weeks after the initial assessment. We therefore computed a regression equation, in which we used socially desirable responding

Table 2
Concurrent Correlations and Partial Correlations (in Parentheses) With Social Desirability and Relationship Satisfaction Partialled Out of the Relation

Variable	Abuse	Violence	Control
Social desirability	-.11*	<i>ns</i>	-.18
Relationship satisfaction	-.20	-.12*	-.10*
Disagreement is destructive	.32 (.27)	.16 (.13)	.27 (.22)
Constructive conflict behavior	-.36 (-.28)	-.25 (-.22)	-.25 (-.21)

Note. $p < .001$, except where otherwise indicated.
* $p < .05$.

scores, relationship satisfaction, initial conflict behavior, gender (men = 0; women = 1) and initial IPV attitude scores as independent variables to predict Time 2 constructive conflict behavior. Socially desirable responding, relationship satisfaction, gender, and initial conflict behavior variables were entered in the first step of the analysis, with the initial IPV attitude scores entered on the second step (see Table 3). The results showed that, as a group, attitude variables accounted for a significant portion of variance, over and beyond that due to initial levels of constructive conflict behavior, socially desirable responding, gender, and relationship satisfaction. Moreover, abuse, control, and violence scores each accounted for unique variance in later constructive conflict behavior.

Second, we examined whether the IPVAS scores of respondents who remained in their romantic relationship differed from those who broke up. A group difference emerged for control, $t(437) = 2.0, p < .05$, showing that those who broke up were less tolerant of control ($M = 10.2, SD = 4.2$) than were those who remained in their relationship ($M = 11.3, SD = 3.8$).

Discussion

The data from Study 1 replicate the factor structure found by Smith et al. (2005) using a much larger sample of college students that is more representative of college populations. However, the findings suggest some modifications to the IPVAS. Two items were omitted on an a priori basis owing to poor distributional properties, and problems generated by wording led to the elimination of a third item. Some further modifications were supported by Smith et al.'s original data. Specifically, in their study, two items that had low loadings (<.40) on their primary factor and high cross loadings were similarly problematic in our own data and were eliminated. A sixth item was also eliminated owing to a cross-loading problem resulting in the IPVAS-Revised, a 17-item version of the scale developed by Smith et al.

Notwithstanding the importance of the results reported thus far concerning the structure of attitudes toward IPV, our study is particularly noteworthy for providing the first validity data pertaining to the measure. Specifically, we examined two concurrent validity criteria. A belief that is known to be dysfunctional for relationships, that disagreement is destructive, correlated signifi-

cantly with each of the subscales of the IPVAS-Revised in the expected direction. Similarly, a self-report of constructive conflict behavior that is known to be highly correlated with observed behavior, the constructive communication subscale from the Communication Patterns Questionnaire, also correlated with each of the IPVAS-Revised subscales in the expected direction. In both cases, the magnitude of the correlations decreased when social desirability and relationship satisfaction were partialled out of the relationship, but neither the pattern of the associations nor the level of statistical significance changed.

Regarding predictive validity, an interesting set of findings emerged. The IPVAS-Revised subscales, as a group, predicted change in reported constructive conflict behavior over and beyond initial levels of such behavior, socially desirable responding, and relationship satisfaction with abuse, violence, and control, all accounting for unique variance. In contrast, when continuing relationships were compared with those that broke up, it was only scores on the control subscale that distinguished the two groups. These findings point to the utility of distinguishing the subscales, rather than simply using an overall attitude score.

Study 2

The second study had two important goals. The first goal was to determine whether the components of attitudes toward IPV that emerged from Study 1 were substantiated in a confirmatory factor analysis. The second goal was to provide further psychometric data on the IPVAS-Revised. Toward this end, test-retest reliability was examined, and additional data on concurrent and predictive validity are provided. This was done by using two different measures of relationship conflict and two measures that we did not expect to be highly related to attitudes toward IPV, reports of parents' marital satisfaction and respondents' pro-divorce attitudes. Finally, and perhaps most important, attitudes toward IPV were examined in relation to reports of its occurrence. This was done by examining the relation between the IPVAS-Revised and the most widely used assessment of IPV, the Conflict Tactics Scale. Specifically, we provide both concurrent and predictive validity data relating IPV attitudes to reported IPV.

Method

Participants

Participants were 687 students (537 women) in an introductory course on families across the lifespan that met university liberal studies requirements in social sciences. Their mean age was 19.75 years ($SD = 2.2$). Sixty-nine percent of the sample was White, 14% was African American, 9% was Latino, and the remainder indicated mixed race, Asian, or "other." Approximately 53% ($n = 365$) were in romantic relationships. On average, these relationships had lasted 7-12 months at the time of the initial assessment.

Procedure

As in Study 1, students were offered multiple options to earn extra credit for the class. One of the options, approved by the Florida State University Institutional Review Board, was to complete the measures used in this study. Before doing so, they read a consent form explaining the voluntary nature of the participation

Table 3
Summary of Hierarchical Regression Analysis for Variables Predicting Later Constructive Conflict Behavior

Variables in equation	B	t(335)	ΔR ²	F (dfs)
Step 1			.40	55.14** (4, 332)
Constructive conflict behavior	.56	10.83**		
Satisfaction	.10	1.88*		
Social desirability	.03	0.59		
Gender	.13	3.3**		
Step 2			.06	11.79** (7, 329)
IPVAS Abuse	-.12	-1.89*		
IPVAS Violence	-.14	-2.78**		
IPVAS Control	-.09	-1.83*		

Note. IPVAS = Intimate Partner Violence Attitude Scale (Smith, Thompson, Tomaka, & Buchanan, 2005).
* $p < .05$. ** $p < .01$ one-tailed.

and were told that the instructor in the course was not one of the researchers conducting the survey. Students who agreed to participate completed all the measures described in an initial survey. Fourteen weeks later, they again completed the IPVAS–Revised, the measures of conflict behavior, and IPV occurrence.

Measures

Conflict behavior. Conflict behavior was assessed in two ways. First, we adapted items previously used to assess offspring perceptions of interparental conflict (Grych, Seid & Fincham, 1992) so that participants could respond to them in reference to their own romantic relationships. Specifically, we focused on the conflict properties subscale of this measure and adapted items so that respondents answered questions regarding conflict frequency (e.g., “We hardly ever argue or disagree”), intensity (e.g., “We tend to get really angry when we argue or disagree”), and resolution (e.g., “When we disagree about something we usually come up with a solution”). This 12-item scale had a coefficient $\alpha = .87$ at Time 1 and $\alpha = .88$ at Time 2. Second, we assessed degree of the demand-withdrawal pattern in the relationship using items from the Communication Patterns Questionnaire (Heavey et al., 1996). Thus, respondents indicated the extent to which each partner demanded and the other withdrew during a problem discussion (e.g., “Man nags or demands while woman withdraws, becomes silent, or refuses to discuss the problem”) or in broaching a relationship problem (e.g., “Woman tries to start a discussion while man tries to avoid a discussion”). The demand-withdraw pattern was assessed because it is known to be strongly associated with relationship distress (Snyder, Heyman, & Haynes, 2005). Thus, we anticipated that attitudes toward IPV would be associated with this pattern.

Parental marital satisfaction. We used two items to assess student report of parental satisfaction (“All things considered how happy do you think your parents are with their relationship?” and “In general, how satisfied do you think your parents are with their relationship?”). Responses to these items were highly correlated, $r(564) = .79$, and consequently, we summed them to provide a single index, with higher scores representing greater satisfaction.

Pro-divorce attitudes. We used a six-item scale, devised by Amato and Rogers (1999), that assesses the degree to which respondents endorse attitudes that facilitate divorce (e.g., “The personal happiness of an individual is more important than putting up with a bad marriage”; “In marriages where parents fight a lot, children are better off if their parents divorce or separate”; “Couples are able to get divorced too easily today”). This scale yielded an $\alpha = .67$ in the present study. Items were coded and summed so higher scores reflect greater pro-divorce attitudes.

Revised Conflict Tactics Scale (CTS-2). The CTS-2 is a validated measure that assesses IPV in couples (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The CTS, in its various forms, has been used extensively to assess IPV since it was first made available (Straus, 1979). Notwithstanding its limitations, the CTS-2 represents the de facto gold standard in IPV research, and we used it in our effort to provide validity data on the IPVAS–Revised. Toward this end, we used two subscales from the CTS-2, the psychological aggression scale (e.g., “My partner called me fat or ugly”), and the physical assault scale (e.g., “I twisted my partner’s arm or hair”). We used these subscales to assess how

frequently these tactics were used in romantic relationships in the preceding 2 months. The most severe items on these scales were omitted, leaving the resultant scale with 26 items. In the present sample, both psychological aggression ($\alpha = .83$ and $.90$ at Time 1 and Time 2, respectively) and physical assault ($\alpha = .81$ and $.91$ at Time 1 and Time 2, respectively) showed adequate internal consistency. Higher scores reflected greater levels of IPV.

Relationship satisfaction. Relationship satisfaction was assessed using the same measure as in Study 1. Coefficient α in the present sample was $.91$.

IPVAS–Revised. The IPVAS–Revised was administered at Time 1.

Results

Recall that the first goal of this study was to further examine the factor structure derived from Study 1. Accordingly, a confirmatory factor analysis was done using Amos 6.0 (Arbuckle, 2005) in which each item was allowed to load only on its primary factor (see Figure 1). This model provided an adequate fit to the data, $\chi^2(115, N = 687) = 360.08$, CFI = $.94$, root-mean-square error of approximation (RMSEA) = $.056$. Our RMSEA falls between the $.05$ value recommended for a good fit by Browne and Cudeck (1993) and the $.06$ value recommended by Hu and Bentler (1999). The 90% confidence interval for RMSEA was $.049$ to $.062$. This upper bound exceeds recommendations for a good fit but falls well short of the upper bound of values considered to provide a reasonable fit ($.08$; Browne & Cudeck, 1993). In sum, our confirmatory factor analysis provided support for the underlying factor structure identified in Study 1.

Coefficient α for abuse (Time 1 = $.81$, Time 2 = $.92$), violence (Time 1 = $.66$, Time 2 = $.83$), and control (Time 1 = $.71$, Time 2 = $.68$) showed adequate internal consistency. The test–retest correlations between corresponding subscales over the 14-week interval were computed for those who remained in relationships and provided some data that speak to test–retest reliability (abuse = $.53$, violence = $.39$, control = $.58$). As real change might have occurred, given the length of the test–retest interval, it is anticipated that even higher levels of test–retest reliability would emerge over a shorter period.

To examine further the validity of the IPVAS–Revised, we computed bivariate correlations between the abuse, violence and control subscales and all the other variables assessed. These correlations were computed separately for men and women. The only correlation that differed by gender was that between the violence subscale and later demand withdrawal (men, $r = .56$; women, $r = .23$; $z = 2.15$, $p < .05$). For both genders, respondents who reported higher scores on the violence subscale reported significantly greater demand withdrawal, but this association was significantly stronger for men than for women. For ease of presentation, Table 4 shows the associations for the sample as a whole. As predicted, the IPVAS–Revised subscales were unrelated to reports of parental marital satisfaction, providing some evidence for discriminant validity. The other construct assessed in the service of investigating discriminant validity, pro-divorce attitudes, yielded an interesting set of results. Scores on abuse and violence subscales were unrelated to pro-divorce attitudes, as expected, but scores on the control scale were inversely and significantly correlated with this variable. As anticipated, all remaining constructs

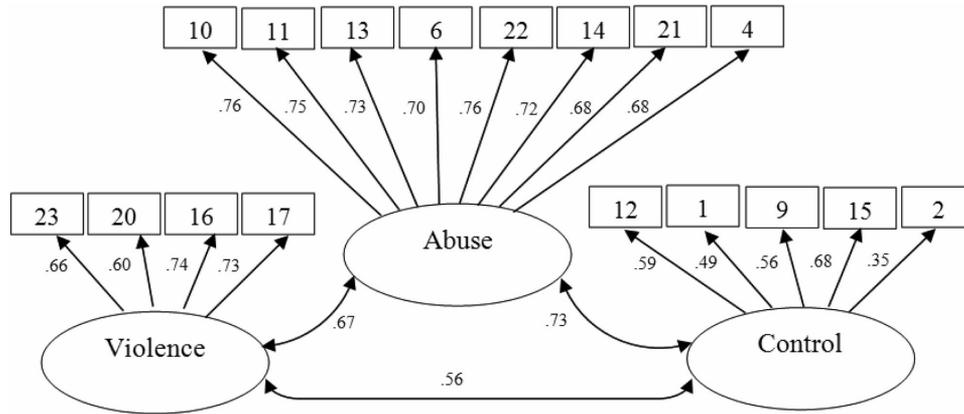


Figure 1. Confirmatory factor analysis of the Intimate Partner Violence Attitude Scale—Revised.

assessed provided good evidence of concurrent validity. It is interesting that the highest correlation found for the violence component of attitudes toward IPV was with the CTS-2 assault scale. In a similar vein, the highest correlations found for the abuse and control subscales were with the CTS-2 psychological aggression scores. It is important to note that these associations did not simply reflect the operation of relationship satisfaction as a third variable: When relationship satisfaction was statistically controlled, both the significance and pattern of relationships remained largely unaltered.

Turning to predictive validity, we examined whether the IPVAS–Revised subscales predicted later conflict over and beyond initial levels of conflict and relationship satisfaction for respondents who were in a romantic relationship throughout the study period. In light of the gender difference involving a longitudinal association, we computed the regression equations separately for each gender. In the first analysis, the IPVAS–Revised subscales,

relationship satisfaction, and initial level of demand withdrawal served as predictor variables, and later demand withdrawal was the dependent variable. The standardized regression weights are shown in Table 5. To test for gender differences, we used Amos software (Arbuckle, 2005) to compare a model in which we constrained corresponding longitudinal relations between IPVAS subscales and the dependent variable to be equal for each gender with one in which we successively freed each constraint. The constrained model did not adequately fit the data, $\chi^2(3, N = 262) = 9.55, p < .05, CFI = .96, RMSEA = .09$. However, allowing only the path from violence to later demand withdrawal to vary by gender resulted in a model that adequately fit the data, $\chi^2(2, N = 262) = 3.35, p > .05, CFI = .99, RMSEA = .05$. Comparing these two models showed that the change in model fit was significant, $\Delta\chi^2(1, N = 262) = 6.2, p < .01$. Violence was related to later demand withdrawal for both sexes, but the relationship was stronger for men. The only other significant path was between initial and later demand withdrawal for women. Turning to the second conflict measure, conflict properties, the constrained model fit the data adequately, $\chi^2(3, N = 262) = 1.8, p > .05, RMSEA = .01$, and showed that only initial level of conflict predicted later conflict, a finding that may reflect the fact that there

Table 4
Concurrent Correlations and Partial Correlations (in Parentheses) With Relationship Satisfaction Partialled Out of the Relationship

Variable	IPVAS–Revised scales		
	Abuse	Control	Violence
Parents' marital satisfaction	-.06 <i>ns</i>	-.02 <i>ns</i>	-.09 <i>ns</i>
Pro-divorce attitude	.02 <i>ns</i>	-.18	.00
Own relationship satisfaction	-.23	-.16	-.16
Conflict properties, Time 1	.31 (.22)	.24 (.18)	.26 (.21)
Conflict properties, Time 2	.25 (.18)	.19 (.14)	.24 (.19)
Demand withdraw, Time 1	.33 (.28)	.20 (.16)	.17 (.13)
Demand withdraw, Time 2	.23 (.22)	.20 (.19)	.27 (.26)
CTS psy agg, Time 1	.43 (.38)	.27 (.23)	.33 (.30)
CTS psy agg, Time 2	.21 (.16)	.18 (.15)	.34 (.31)
CTS assault, Time 1	.23 (.21)	.10 <i>ns</i> (.09 <i>ns</i>)	.39 (.38)
CTS assault, Time 2	.10 <i>ns</i> (.11 <i>ns</i>)	.04 <i>ns</i> (.05 <i>ns</i>)	.20 (.21)

Note. IPVAS = Intimate Partner Violence Attitude Scale (Smith, Thompson, Tomaka, & Buchanan, 2005); CTS psy agg = Conflict Tactics Scale, psychological aggression (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). All values are significant at $p < .01$, except where otherwise indicated.

Table 5
Standardized Beta Coefficients in Predicting Later Outcomes for Women and Men (in Parentheses)

Time 1 predictor	Time 2 dependent variable (DV)			
	Demand/withdrawal	Conflict	CTS-2 psy agg	CTS-2 assault
Satisfaction	.08 (.02)	.03 (.03)	-.11 (.12)	.08 (.24)
Initial DV score	.46** (.04)	.70** (.55**)	.53** (.67**)	.23** (.01)
Violence	.10* (.55**)	-.03 (-.06)	.16** (.34*)	.11 (.21)
Abuse	.05 (.27)	-.04 (-.11)	.14* (.14)	.05 (-.05)
Control	.06 (.23)	.00 (.21)	.04 (.10)	.00 (.05)

Note. CTS-2 psy agg = Revised Conflict Tactics Scale, psychological aggression (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). * $p < .05$. ** $p < .01$.

was limited change in this variable over the study (test–retest correlation = .67).

Reports of IPV occurrence were subject to similar analyses. For psychological aggression, the constrained model fit the data, showing again that the longitudinal relations did not vary by gender, $\chi^2(3, N = 262) = 2.48, p > .05, RMSEA = .01$. Perhaps most important, the path from violence to psychological aggression was significant for both genders, as was the path from abuse for women. Because the physical assault scores were positively skewed, they were subject to a log transformation before conducting the analyses. No gender difference was found, $\chi^2(3, N = 262) = .46, RMSEA = .00$, and the only significant path was between initial and later assault for women. As this finding may reflect relatively low base rates of assault, we computed change in physical assault scores and compared two equally sized groups comprising those who showed change on this variable and those who did not. The groups differed in abuse, $t(364) = 4.95, p < .01$, and violence, $t(364) = 3.41, p < .01$, scores, with the group showing change in assault exhibiting scores indicative of more favorable attitudes toward abuse and violence, respectively.

Discussion

The present study provides further evidence concerning the underlying structure of attitudes toward IPV in that a confirmatory factor analysis using the three subscales of abuse, violence, and control that emerged from Study 1 was consistent with the data. With one exception, all items loaded .49 or higher on their factors. The exceptional item (“I would not like for my partner to ask me what I did every minute of the day”), however, had a loading above .3.

Most important, this study provides further data on the discriminant, convergent, and predictive validity of the IPVAS–Revised. As anticipated, IPVAS–Revised subscales did not correlate with reports of parents’ marital satisfaction. The abuse and violence subscales were also unrelated to pro-divorce attitudes, but the control subscale scores were inversely related to pro-divorce attitudes. Although it was not anticipated, the finding for control makes good sense. In retrospect, it is clear that partner access to divorce undermines realization of high partner control attitudes, and therefore, respondents with more favorable control attitudes should have less favorable attitudes toward divorce, which was what we found. The findings regarding pro-divorce attitudes thus speak to both discriminant and convergent validity supporting separate examination of the factors underlying the IPVAS–Revised.

In the absence of measures specifically designed to assess attitudes toward IPV, our attempts to assess convergent validity were restricted to examining variables that, on theoretical grounds, might be expected to relate to IPV attitudes. Strong support was obtained for convergent validity in that significant concurrent correlations were obtained with conflict properties, the demand-withdrawal pattern, and psychological aggression. Moreover, both the abuse and violence subscales correlated with reported physical assault. The data rule out the alternative hypothesis that these correlations simply reflect their joint association with relationship satisfaction, as they remained statistically significant when relationship satisfaction was statistically controlled.

The findings also speak to predictive validity. When examining measures of conflict and IPV 14 weeks after the initial assessment, we found that the IPVAS–Revised scales accounted for variance in later measures over and beyond that attributable to initial levels of the variable and relationship satisfaction. This occurred for the demand-withdrawal conflict pattern as well as psychological aggression as assessed by the CTS-2. In both cases, the violence subscale accounted for unique variance, and in the case of psychological aggression, so did the abuse subscale for women. The different findings for the subscales again point to the utility of distinguishing among them. It is also noteworthy that participants who exhibited change in assault had more favorable attitudes toward abuse and violence relative to those who did not exhibit such change. Finally, the IPVAS–Revised violence subscale was more strongly related to reported demand withdrawal among men than among women. As this attitude component was related to the occurrence of IPV, this gender difference may reflect greater partner withdrawal by women in the face of male-perpetrated IPV than vice versa, but we did not have the data to test this hypothesis.

General Discussion

Since Makepeace (1981) observed that dating and courtship violence on college campuses is a “major hidden social problem” (p. 100), significant steps have been taken to recognize the problem. However, rates of IPV on campuses remain high, as noted earlier. Informed by the view that “violence is a learned response to a stressor (Spivak, Hausman, & Prothrow-Stith, 1989) *supported by attitudes of acceptance of the behavior*” (emphasis added, Coker, 2004, p. 1327), one approach to this problem has been to offer interventions that combat attitudes that condone or support IPV. Recent evaluation of a university-based program that successfully undermined rape-supportive attitudes exemplifies this approach (see Shultz, Scherman, & Marshall, 2000). An analogous approach to intervention for IPV would require a psychometrically sound measure of attitudes toward IPV. Unlike the assessment of rape myths, which has received considerable attention (see Lonsway & Fitzgerald, 1995), research on attitudes toward IPV is relatively underdeveloped, which emphasizes the importance of the studies reported here.

The potential significance of attitudes toward IPV is highlighted by an extensive literature in health psychology and social psychology in which attitudes are emerging as important in the prediction of actual behaviors, as well as the acceptance of various behaviors. Historically, the attitude–behavior relation has been low and inconsistent. However, when assessed at the same level of specificity, as in Study 2, much stronger and more stable relations have emerged between attitudes and behavior (Fishbein & Ajzen, 1974). Currently, it is not known whether attitudes toward IPV are merely a correlate of IPV or whether they play a causal role in its occurrence. It may be that changing IPV results in corresponding changes in attitudes toward IPV. However, it is equally plausible that changes in attitudes toward IPV may lead to changes in the occurrence of IPV. Finally, possible bidirectional influences may exist between these two variables. Although both intervention and longitudinal research have the potential to clarify this relationship, such research efforts depend upon the existence of psychometrically sound measures of attitudes to realize this potential.

Limitations and Future Directions

Results from the present studies are encouraging and suggest that the IPVAS–Revised may provide a state-of-the-art measure for self-report assessment of attitudes toward IPV. However, it is important to remember that our samples consisted of college students with an overrepresentation of women, and this limits generalizability. Whether the attitudes toward IPV identified in this research can be fruitfully employed to study domestic violence also remains to be determined. Further, it would have been ideal to include observationally coded behavioral measures in the place of our self-report data for variables such as interpersonal conflict. These limitations are tempered by the fact that our sample was large and ethnically diverse and that college students are a key population for research on intimate partner violence in their own right (Straus, 2004).

Future research could profitably cross validate the associations and factor structure of the IPVAS–Revised in different age groups and populations. In addition, research further examining the validity of the IPVAS–Revised that uses observationally coded behavior and tracks associations over longer periods of time is needed. Finally, research examining how attitudes toward IPV are associated with certain forms of psychopathology (such as antisocial personality disorder) would likely generate interesting and important findings.

Notwithstanding the limitations outlined, the development of the IPVAS–Revised represents an important step in the study of IPV. With the advent of preventive interventions that attempt to change attitudes toward IPV on college campuses, the need for a psychometrically sound assessment device has become critical. The IPVAS–Revised is an attempt to fill this need.

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