

Gender Differences in Psychological, Physical, and Sexual Aggression Among College Students Using the Revised Conflict Tactics Scales

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In response to criticisms of the Conflict Tactics Scales, Straus revised the original scale to include sexual aggression and injury. The purpose of the present study was to use this new scale to replicate and expand existing knowledge of psychological, physical, and sexual aggression in dating relationships. Four-hundred-eighty-one college students completed the Revised Conflict Tactics Scales. As expected, females reported perpetrating more psychological aggression than males; there were no gender differences in reported physical aggression; and psychological and physical aggression tended to co-occur. Contrary to previous research, there were no gender differences in injuries. As expected, males reported perpetrating more sexual coercion than females; however, females also reported perpetrating sexual aggression, and there were no gender differences in reported victimization. For males, sexual coercion perpetration (not victimization) was related to the perpetration and victimization of physical and psychological aggression. For females, both sexual coercion perpetration and victimization were related to the perpetration and victimization of psychological aggression and victimization from physical aggression, but not to physical aggression perpetration.

Hundreds of studies using the Conflict Tactics Scales (CTS), developed by Straus, have reported high rates of perpetration of violence in romantic relationships by both females and males (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The high rate of reported violence by women, which is equal to that reported by men, has prompted attacks of the CTS on methodological grounds. Chief among these criticisms are that:

1. the CTS does not consider the context and consequences of the aggression (e.g., women are more likely to be physically injured by men than men are by women: Marshall, 1992);
2. not enough physically aggressive acts are included, thus reducing the validity and reliability of the results (Straus et al., 1996);
3. sexual aggression is not addressed, and men are much more likely to perpetrate sexual aggression in a relationship than are women (Straus et al., 1996);
4. respondents are not asked about their motivations for aggressive acts, which can be important because females' aggression may be only in self-defense (e.g., Pleck, Pleck, Grossman, & Bart, 1977-1978);

5. the CTS limits the context of the violence to the everyday settings in which it occurs; the wider historical context and background both of the relationship of men and women in general, along with the social, cultural, and universal laws of societies in general, need to be examined (e.g., Dobash & Dobash, 1988).

Recently, Straus et al. addressed some of these criticisms by revising their widely-used CTS. Additions to the Revised Conflict Tactics Scales (CTS2) include an injury subscale (six questions that address possible consequences of physical aggression); expansion of the subscales of negotiation, psychological aggression, and physical aggression, so that each subscale now has added facets to increase reliability and validity; and a sexual coercion subscale (seven items that address varying levels of sexual coercion).

By utilizing the CTS2, we hoped to provide a stronger test of previous findings that females and males reported equal rates of physical aggression in relationships (e.g., Straus & Gelles, 1986; Straus & Gelles, 1988). In addition, through using the new injury subscale of the CTS2, we obtained new data on gender differences in possible consequences of physical aggression in relationships. That is, even if males and females are perpetrating equal amounts of physical aggression (or if females are perpetrating more), are they being physically injured at the same rate? Past research that has assessed injurious consequences with measures other than the CTS has shown that females experience a higher rate of injury at the hands of their male partners than males do at the hands of their female partners (e.g., Cantos, Neidig, & O'Leary, 1994; Cascardi, Langhinrichsen, & Vivian, 1992; Stets & Straus, 1990). It was therefore expected in this study that the females who are involved in physically aggressive relationships would experience a higher rate of injury than the males who are involved in physically aggressive relationships.

The new sexual coercion subscale offers an opportunity to further explore the dynamics of abusive relationships. Specifically, this new subscale can be used to address many flaws inherent in the current sexual aggression literature. First, most research on sexual aggression asks respondents to report if they have ever been raped, forced to have sex on a date without their consent (date rape), or verbally coerced or pressured into sex (e.g., Koss, Gidycz, & Wisniewski, 1987; Schubot, 2001; Struckman-Johnson, 1988; Zweig, Barber, & Eccles, 1997). These questions do not address sexual aggression within the context of an ongoing romantic relationship. The CTS2, however, asks respondents to report forced, threatened, or pressured anal, oral, or vaginal sex within the past 12 months, and over the course of the relationship. By asking about sexual aggression within the context of a romantic relationship, we can gain better knowledge of the incidence of sexual aggression between men and women in presumably loving, committed relationships. Second, an assumption in the existing sexual aggression literature is that many men who are victims of sexual coercion and aggression are victimized by other men (e.g., Zweig et al., 1997). However, this assumption cannot be confirmed if the sex of the offender is not asked, as is the case in the Zweig and associates study. In the current study the gender of the respondent's partner was obtained, and therefore, if a male is sexually coerced or forced, it is known whether the offender is male or female.

The psychological aggression subscale of the CTS has long been ignored in the literature. Researchers who use the CTS tend to report only physical abuse, whereas few studies have reported the amount of psychological aggression. Gender differences, however, have been found in psychological aggression using the Psychological Maltreatment Inventory, with females perpetrating significantly more psychological aggression than males (e.g., Kasian & Painter, 1992; Molidor, 1995). In the present study, the incidence of psychological aggression and gender differences were examined.

In addition to examining incidence data and gender differences on each of the subscales of the CTS2 separately, this new scale offers the opportunity to explore relations among the subscales. For instance, if females perpetrate more psychological and physical aggression and males perpetrate more sexual aggression, is there a relation between the perpetration of psychological and physical aggression among females and their experience of sexual aggression at the hands of their male partners? Finally, to address the fourth criticism of the CTS, a new way of assessing self-defense as a motive is presented in this report. It has long been assumed that the high rate of physical aggression perpetrated by females was mostly in self-defense (e.g., Saunders, 1986; Walker, 2000). Although motives are not directly assessed with the CTS2, we offer a new way of indirectly exploring the self-defense motive: a difference score. For each respondent, the amount of aggression experienced can be subtracted from the amount of aggression perpetrated. A positive score would indicate that respondents report perpetrating more aggression than they receive, suggesting that they are not acting solely out of self-defense.

In sum, the present study investigated dating aggression using the newly revised Conflict Tactics Scales. Based on previous research, it was hypothesized that females perpetrate either equal or greater amounts of both physical and psychological aggression than males. However, because males are physically stronger than females, it was hypothesized that females would be injured at a higher rate than males in physically abusive relationships. It was also hypothesized that males would perpetrate more sexual aggression than women would, and the possible relationships between psychological, physical, and sexual aggression were explored. Finally, a new method of indirectly assessing self-defense as a motive using the CTS2 is presented.

METHOD

Participants

Participants were 481 college students (179 male, 302 female; mean age 19.1 years) from a large northeastern predominantly upper-middle class university. Potential participants were recruited through the introductory psychology research pool and were required to have been in a romantic relationship within the previous 6 months in order to qualify for the study. Those who were eligible to participate were offered research credit for their introductory psychology course. The majority of participants were White (77%), with the remainder being Asian (13%), Hispanic (5%), Black (2%), and Other (3%).

Materials

Demographic Questionnaire. In addition to providing information on age, race, and gender, participants were also asked to indicate the gender of their partner, the type of relationship they had (married, living together, dating), the length of the relationship, and the level of emotional commitment (ranging from "not emotionally attached or in love" to "in love and married").

The Revised Conflict Tactics Scales (CTS2; Straus, 1996). The CTS2 is a 78-item questionnaire that assesses the amount of negotiation, psychological aggression, physical aggression, sexual coercion, and injury that occurs between the males and females, as reported by the participants. Participants are asked to rate on a 6-point scale (1 = once; 6 = more than 20 times) the number of times a particular conflict tactic was used by both the

participant and his/her partner in the previous year. In addition, participants are asked to indicate whether or not they or their partners ever used each conflict tactic over the course of the relationship. The CTS2 has demonstrated good construct and discriminant validity and good reliability, with internal consistencies ranging from .79 to .95 (Straus et al., 1996).

The data from the CTS2 were analyzed in several ways. First, *prevalence* data were computed; that is, for each subscale (negotiation, psychological aggression, physical aggression, injury, sexual coercion) the percentage of participants who reported perpetrating and receiving any one of the acts in that subscale was computed. Analyzing the data in this manner allows for an estimate of the percentage of males and females who perpetrate each of the different types of aggression and who are the victims of each of the types of aggression. Prevalence data gives an indication of the percentage of participants who perpetrate or experience each of the aggressive acts in their relationships, but this data is limited because it does not provide information on the severity or frequency of these aggressive acts. To examine this, the chronicity of each of the subscales was computed. For each participant, the amount of acts perpetrated and received in the previous year on each of the subscales was computed. Participants ranked on a scale from 0 to 6 how many times in the previous year they experienced the acts listed (0 = 0 times; 1 = 1 time; 2 = 2 times; 3 = 3 to 5 times; 4 = 6 to 10 times; 5 = 11 to 20 times; 6 = more than 20 times). To obtain an approximate count of the number of times each act was committed in the previous year, data were transformed according to the following scale: 0 = 0 acts in previous year; 1 = 1 act in the previous year; 2 = 2 acts in the previous year; 3 = 4 acts in the previous year; 4 = 8 acts in the previous year; 5 = 16 acts in the previous year; 6 = 25 acts in the previous year.

Finally, because couples were not recruited for this study, the participating males and females were not necessarily dating each other. Thus, each relationship that is reported on is largely independent for the males and females. Consequently, comparing the use and receipt of aggressive acts across gender may not be informative. It is more informative to investigate the amount of aggressive acts each individual used and received within the relationship on which they are reporting. That is, are participants using more aggression than they are receiving, or vice versa? To answer this question, a difference score was calculated for each participant who reported being involved in an aggressive relationship as either the perpetrator or victim of each type of aggression (e.g., if participants reported that they were either the perpetrators or victims of physical aggression in their relationship, a physical aggression difference score was calculated). For each participant, we subtracted the amount of aggression received from the amount of aggression used. A positive score indicates that participants used more aggression in their relationships than they received, whereas a negative score means that they received more aggression than they used. In other words, those who received a positive difference score could be labeled the primary perpetrators of aggression in their relationships, whereas those who received a negative score could be labeled the primary victims.

RESULTS

The majority of the participants were dating their partners (97%), with 3% unmarried, living with their partners. However, the level of emotional commitment varied: 37% of the participants were either not emotionally attached to their partners or were emotionally attached but not in love; 32% were in love with their partners; 30% were in love and either

thinking about or discussing marriage with their partners; and 1% were engaged to their partners. The average length of relationship was 11.89 months (SD 10.91). In addition, 5 males (2.8%) reported that they currently had a male partner, and 3 females (1%) reported that they currently had a female partner.

Table 1 presents the data for the perpetration and victimization of each of the CTS2 subscales. The prevalence of each act (% yes) is presented. In addition, for each subscale the mean number of acts used within the previous year by the participants who reported using such acts is presented, as is the mean number of acts received in the previous year by those participants who reported the victimization of such acts.

Negotiation

All participants reported using negotiation tactics to resolve conflicts in their intimate relationship, and all but one female reported that their partners used such tactics. There were no gender differences in either the use (males: $M = 59.4$, $SD = 39.3$; females: $M = 59.5$, $SD = 36.3$; $t = -0.023$, $p > .9$) or receipt (males: $M = 56.1$, $SD = 38.3$; females: $M = 60.2$, $SD = 37.8$; $t = -1.14$, $p > .25$) of negotiation tactics during the previous year in intimate relationships.

Perpetration of Aggression

Psychological Aggression. The majority of the participants reported using psychologically aggressive acts in their relationships. Moreover, there were no gender differences in the perpetration of psychological aggression over the course of the relationship: 82% of the males and 86% of females reported that they used some type of psychologically aggressive act ($\chi^2 = 1.33$, $p > .25$). Chronicity scores for participants who reported perpetrating (males: $n = 147$; females: $n = 258$) psychological aggression were analyzed to investigate gender differences in the amount of psychologically aggressive acts perpetrated within these relationships in the previous year. When chronicity is considered, females report having perpetrated significantly more acts than males (males: $M = 13.30$, $SD = 18.7$; females: $M = 18.79$, $SD = 21.6$; $t = 2.58$, $p < .01$). A closer look at the individual items in this subscale shows that the higher rate of perpetration for females can be accounted for by the items "insulting or swearing at partner," "shouting or yelling at partner," "stomping out of the room in a disagreement," and "doing something to spite the partner."

Physical Aggression. A substantial minority of participants reported perpetrating physical aggression in their relationships. Specifically, 29% of males and 35% of females reported that they perpetrate physical aggression, and as with psychological aggression, there were no significant gender differences ($\chi^2 = 1.93$, $p > .15$). When physical aggression is subdivided into minor and severe aggression, a similar pattern is seen. That is, over the course of the relationship, 25.5% of males and 34% of females reported perpetrating minor physical aggression ($\chi^2 = 3.53$, $p > .05$), and 10.5% of males and 7.5% of females reported perpetrating severe physical aggression, ($\chi^2 = 1.24$, $p > .25$).

There were no gender differences in the amount of physically aggressive acts perpetrated within the previous year (males: $M = 8.13$, $SD = 13.9$; females: $M = 7.30$, $SD = 12.7$; $t = 0.38$, $p > .70$) in the subset of individuals in physically aggressive relationships (males: $n = 52$; females: $n = 105$). Moreover, there were no gender differences in the amount of minor (males: $n = 46$, $M = 7.00$, $SD = 11.1$; females: $n = 101$, $M = 7.01$, $SD = 12.0$; $t = -0.01$, $p > .99$) or severe (males: $n = 19$, $M = 5.32$, $SD = 9.0$; females: $n = 23$, $M = 2.42$, $SD = 2.1$; $t = 1.50$, $p > .10$) physical aggression perpetrated.

TABLE 1. Use and Receipt of the Subscales of the CTS2

	Males		Females	
	% Yes in Relationship (<i>n</i> = 179)	Previous Year <i>M</i> (<i>SD</i>)	% Yes in Relationship (<i>n</i> = 302)	Previous Year <i>M</i> (<i>SD</i>)
<i>Use of:</i>				
Negotiation	100.0%	59.40 (39.3) (<i>n</i> = 179)	100.0%	59.50 (36.3) (<i>n</i> = 302)
Psychological aggression	82.0%	13.30 (18.7)* (<i>n</i> = 147)	86.0%	18.79 (21.6)* (<i>n</i> = 258)
Overall physical aggression	29.0%	8.13 (13.9) (<i>n</i> = 52)	35.0%	7.30 (12.7) (<i>n</i> = 105)
Minor physical aggression	25.5%	7.00 (11.1) (<i>n</i> = 46)	34.0%	7.01 (12.0) (<i>n</i> = 101)
Severe physical aggression	10.5%	5.32 (9.0) (<i>n</i> = 19)	7.5%	2.42 (2.1) (<i>n</i> = 23)
Injury	6.1%	2.36 (2.2) (<i>n</i> = 11)	6.5%	2.14 (3.5) (<i>n</i> = 20)
Sexual coercion	29.0%**	14.21 (20.1)* (<i>n</i> = 52)	13.5%**	5.55 (8.5)* (<i>n</i> = 40)
<i>Receipt of:</i>				
Negotiation	100.0%	56.10 (38.3) (<i>n</i> = 179)	99.7%	60.20 (37.7) (<i>n</i> = 301)
Psychological aggression	81.0%	13.53 (17.8) (<i>n</i> = 145)	80.0%	14.81 (18.9) (<i>n</i> = 240)
Overall physical aggression	30.5%	9.46 (15.1) (<i>n</i> = 55)	24.5%	5.79 (11.9) (<i>n</i> = 72)
Minor physical aggression	29.5%	7.16 (11.4) (<i>n</i> = 53)	24.0%	5.30 (10.2) (<i>n</i> = 72)
Severe physical aggression	12.5%**	6.32 (8.7)	4.5%**	2.92 (4.0)

Injury	8.4%	(<i>n</i> = 22) 1.80 (1.9)	5.0%	(<i>n</i> = 13) 2.32 (3.5)
Sexual coercion	24.5%	(<i>n</i> = 15) 12.64 (17.8)* (<i>n</i> = 44)	24.0%	(<i>n</i> = 15) 5.63 (7.5)* (<i>n</i> = 72)

Note. Relationship rates reflect the proportion of all participants who reported involvement in the specific target act during the course of the relationship. Mean number in previous year reflects the average number of specific acts experienced by those respondents who reported involvement as either the perpetrator or victim (where appropriate) in either a psychologically aggressive, physically aggressive (minor, severe), injurious, or sexually coercive relationship in the previous year.

*Significant gender difference, $p < .01$.

**Significant gender difference, $p < .001$.

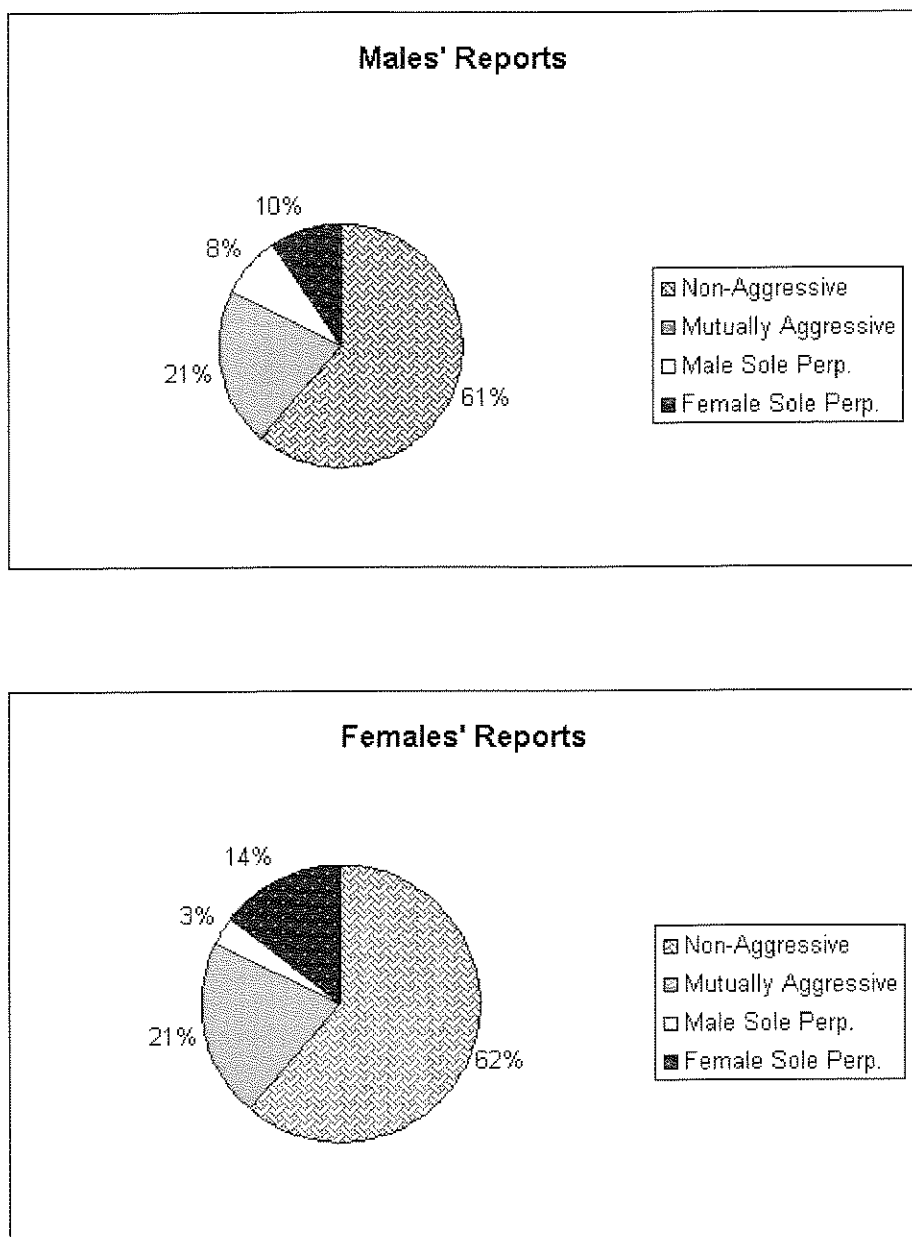


Figure 1. Types of physically aggressive relationships as reported by males and females.

Injury. A minority of the participants reported the infliction of some type of injury in their relationships. Over the course of the relationship, 6.1% of the males and 6.5% of females reported that they inflicted some type of injury ($\chi^2 = .05, p > .8$). For both genders, the majority of injuries were sprains, bruises, and small cuts, and still feeling physical pain the next day.

Analyzing the injury data in the previous manner assesses the percentage of injuries occurring in relationships overall. However, a more informative means of analyzing the data is to assess the percentage of injuries experienced within physically abusive relationships. Therefore, the percentage of males who reported causing injury when they perpetrated physical aggression was compared with the percentage of females who reported causing injury when they perpetrated physical aggression. Approximately 21.2% of males and 17% of females who reported perpetrating physical aggression also reported causing an injury in their partners. There were no significant gender differences in the reported rate of injury inflicted ($\chi^2 = .41, p > .5$) at the hands of physically aggressive partners. Finally, with regard to the number of injuries in the previous year, there were no gender differences within injurious relationships in the amount of injuries inflicted (males: $n = 11, M = 2.36, SD = 2.3$; females: $n = 20, M = 2.14, SD = 3.5$; $t = 0.19, p > .85$).

Sexual Coercion. As with physical abuse, a substantial minority of the participants reported using sexually coercive acts in their relationships, but males were significantly more likely than females to report that they use sexual coercion in their romantic relationships (males: 29%; females: 13.5%; $\chi^2 = 18.00, p < .001$). Moreover, males who sexually coerced their partners reported using significantly more sexually coercive acts within the previous year than females who sexually coerced their partners (males: $n = 52, M = 14.21, SD = 20.1$; females: $n = 40, M = 5.55, SD = 8.5$; $t = 2.55, p < .01$).

Victimization of Aggression

Psychological Aggression. In addition to the majority of participants perpetrating psychological aggression, the majority also reported being victimized by psychological aggression in their relationships. Specifically, 81% of males and 80% of females reported that their partners used psychologically aggressive tactics on them ($\chi^2 = .06, p > .8$). However, unlike the perpetration of psychological aggression in which females reported perpetrating significantly more acts within the previous year, there were no significant gender differences in the number of reported psychologically aggressive acts received in the previous year (males: $M = 13.53, SD = 17.8$; females: $M = 14.81, SD = 18.9$; $t = -0.66, p > .50$).

Physical Aggression. Similar to the perpetration of physical aggression, a substantial minority of participants reported being victimized by physical aggression in their relationships: 30.5% of males and 24.5% of females reported that they are victimized ($\chi^2 = 2.41, p > .1$). A similar picture appears for the victimization of minor physical aggression: 29.5% of males and 24% of females report being victimized ($\chi^2 = 1.89, p > .15$). However, for the victimization of severe physical aggression, there is a significant gender difference: 12.5% of males versus 4.5% of females report being victimized by severe physical aggression ($\chi^2 = 10.56, p < .001$).

Within relationships where the participant was a victim of physical aggression, there were no significant gender differences in the number of physically aggressive acts received in the previous year overall (males: $M = 9.46, SD = 15.1$; females: $M = 5.79, SD = 11.9$; $t = 1.54, p > .10$), or for minor (males: $n = 53, M = 7.16, SD = 11.4$; females: $n = 72, M = 5.30, SD = 10.2$; $t = 0.96, p > .30$) or severe (males: $n = 22, M = 6.32, SD = 8.7$; females: $n = 13, M = 2.92, SD = 4.0$; $t = 1.32, p > .15$) physical aggression.

Injury. As with the infliction of injuries, a minority of participants reported receiving an injury at the hands of their partners: 8.4% of males and 5% of females reported that they sustained an injury ($\chi^2 = 2.21, p > .1$). The percentage of males who reported being injured when their partners perpetrated physical aggression was compared with the percentage of females who reported being injured when their partners perpetrated physical aggression. Specifically, 25.5% of males and 15.1% of females who reported that they were victimized by physical aggression also reported that they were injured ($\chi^2 = 2.15, p > .1$). Furthermore, there were no significant gender differences in the number of injuries received within the previous year (males: $n = 15, M = 1.80, SD = 1.9$; females: $n = 15, M = 2.32, SD = 3.5; t = -0.50, p > .6$).

Sexual Coercion. Unlike the significant gender differences found in the use of sexual coercion, there was no gender difference in the percentage of participants who reported receiving sexual coercion (males: 24.5%; females: 24%; ($\chi^2 = .03, p > .8$). Moreover, males reported being the recipients of sexually coercive acts significantly more often than females did in the previous year (males: $n = 44, M = 12.64, SD = 17.8$; females: $n = 72, M = 5.63, SD = 7.5; t = 2.94, p < .01$).

Types of Aggressive Relationships

Psychological Aggression. Using the lifetime prevalence data, we also examined the types of relationships that the participants were in. That is, were they in relationships where there was no psychological aggression or mutual psychological aggression? Was the male the sole perpetrator of psychological aggression or was the female? According to the males' reports, 14% were in relationships with no psychological aggression, whereas 77% were in relationships with mutual psychological aggression. In 5% of the relationships, the male was the sole perpetrator of psychological aggression, whereas in 4% of the relationships, the female was the sole perpetrator of psychological aggression. According to the females' reports, 12% of the relationships had no psychological aggression, whereas 78% of the relationships were characterized by mutual psychological aggression. Males were the sole perpetrators of psychological aggression in 2% of the relationships, whereas females were the sole perpetrators in 8% of the relationships.

Physical Aggression. For overall physical aggression (Figure 1), 61% of male respondents reported being involved in mutually nonaggressive relationships, whereas 21% reported involvement in mutually aggressive relationships. According to males' reports, in 8% of the relationships, the male was the sole perpetrator of physical aggression, whereas in 10% of the relationships the female was the sole perpetrator. Sixty-two percent of female respondents reported being involved in mutually nonaggressive relationships, and 21% reported involvement in mutually aggressive relationships, mirroring the males' responses. However, in contrast to the males, females reported that they were the sole perpetrators of aggression 14% of the time and that their male partners were the sole perpetrators of aggression only 3% of the time.

Injury. According to males' reports of their relationships, 89% had no injuries inflicted, whereas in 3.5% both partners inflicted injuries; in 2.5% the male was the sole inflictor of injury; and in 5% the female was the sole inflictor. According to females' reports, 91.5% of the relationships had no injuries inflicted, whereas both partners inflicted injuries in 3% of the relationships; in 2% of the relationships, the male was the sole inflictor of injury, whereas in 3.5% of the relationships, the female was the sole inflictor.

Sexual Coercion. When the males were the respondents, 69% reported being in non-sexually coercive relationships, 22.5% in mutually sexually coercive relationships, 6.5% in relationships where they were the sole perpetrator of sexual coercion, and 2% in relationships where their female partner was the sole perpetrator. In contrast, female reports show a higher rate of sole male coercion and a lower rate of mutual coercion. When females were the respondents, 73% reported being in non-sexually coercive relationships, 10.5% in mutually sexually coercive relationships, 13.5% in relationships where their male partner was the sole perpetrator of sexual coercion, and 3% in relationships where they were the sole perpetrator.

Difference Scores

Psychological Aggression. Males report receiving slightly more psychological aggression than they are using (i.e., the mean difference score for males was -0.04 , $SD = 10.9$). The mean difference score for females was 4.9 ($SD = 11.6$), indicating that they report using more psychological aggression than they are receiving. The gender difference in difference scores was significant ($t = -4.30$, $p < .001$), and confirms the conclusions gleaned from the previous analyses showing that females report using more psychologically aggressive acts than they receive.

Physical Aggression. Difference scores suggest that both males and females report that females are the primary perpetrators of physical aggression within the relationship. For males, the mean difference score for physical aggression of any kind was -1.41 ($SD = 8.76$). That is, males report receiving physical aggression more than they are perpetrating. For females, the mean difference score was 3.04 ($SD = 9.27$), indicating that females report perpetrating more physical aggression than they are receiving. The disparity between difference scores for males and females was significant ($t = -3.22$, $p < .001$).

When physical aggression is decomposed into minor and severe, we see a similar story. Again, males are reporting receiving more minor physical aggression than they are perpetrating ($M = -0.92$, $SD = 8.06$), and females are reporting perpetrating more minor physical aggression than they are receiving ($M = 2.94$, $SD = 8.60$). Females had a significantly higher difference score than males for minor physical aggression ($t = -2.90$, $p < .01$). For severe physical aggression, however, there was no significant gender difference between the difference scores (males: $M = -1.23$, $SD = 5.68$; females: $M = 0.59$, $SD = 3.19$; $t = -1.53$, $p > .10$).

Injury. There were no significant gender differences in the difference scores for the injury subscale (males: $M = .05$, $SD = 2.54$; females: $M = -0.31$, $SD = 1.52$; $t = .59$, $p > .5$), which is consistent with the previous analyses indicating no gender differences in the percentage of participants who inflicted or received an injury or in the number of injuries inflicted or received in the previous year.

Sexual Coercion. Males had significantly higher difference scores for sexual coercion than females (males: $M = 3.26$, $SD = 14.68$; females: $M = -2.26$, $SD = 4.95$; $t = 3.14$, $p < .01$). Thus, it can be inferred that males are the primary perpetrators of sexual coercion within these relationships. Again, these are consistent with previous results showing that significantly more males use sexual coercion and that males used significantly more sexually coercive acts in the previous year.

Intercorrelations Between Subscales

Table 2 displays the intercorrelations among the psychological aggression, physical aggression, and sexual coercion subscales. The strongest correlations were between the perpetration and victimization scores within each of the subscales. Individuals who perpetrate more

of these acts are also more likely to experience them. In addition, there was a significantly stronger relation between physical abuse given and received for males than there was for females ($z = 3.04, p < .01$).

A strong relation also exists between the perpetration of each of the types of aggression. In general, those individuals who reported perpetrating one type of aggression were likely to report perpetrating other forms of aggression. There were, however, some differences for males and females. The amount of psychological aggression perpetrated was positively associated with the amount of physical aggression and sexual coercion perpetrated. However, physical aggression perpetrated was significantly correlated with sexual coercion perpetrated for males only. Moreover, the relation between psychological aggression perpetrated and sexual coercion perpetrated was stronger for males than it was for females ($z = 2.62, p < .01$), as was the relation between physical aggression perpetrated and sexual coercion perpetrated ($z = 5.93, p < .001$).

Similarly, the receipt of each of the types of aggression were also positively correlated. Individuals who reported receiving more psychological aggression tended to report receiving more physical aggression. This relation was significantly stronger for males than for females ($z = 2.42, p < .05$). However, psychological aggression received and physical aggression received were correlated with sexual coercion received for females only. Sexual coercion received was not associated with any of the other aggression variables for males.

TABLE 2. Intercorrelations Between the Subscales of the CTS2

	1	2	3	4	5	6
1. Psychological aggression perpetrated						
Males	—	.83** ¹	.60** ²	.64**	.38** ²	.11 <i>ns</i>
Females	—	.85** ¹	.56** ²	.49**	.15* ²	.19**
2. Psychological aggression received						
Males		—	.57**	.66*** ³	.43**	.11 <i>ns</i> ³
Females		—	.48**	.51*** ³	.21**	.23*** ³
3. Physical aggression perpetrated						
Males			—	.82** ¹	.54** ²	.07 <i>ns</i>
Females			—	.70** ¹	.04 <i>ns</i> ²	.03 <i>ns</i>
4. Physical aggression received						
Males				—	.44**	.09 <i>ns</i> ³
Females				—	.22**	.20*** ³
5. Sexual coercion perpetrated						
Males					—	.75** ¹
Females					—	.78** ¹
6. Sexual coercion received						
Males						—
Females						—

¹Items are correlations between the perpetration and victimization scores within each of the subscales.

²Items are correlations between the perpetration of each of the types of aggression.

³Items in italics are correlations between the victimization from each of the types of aggression.

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

Finally, the receipt of one type of aggression tended to correlate with the perpetration of another type of aggression, probably because the receipt and perpetration of one specific type of aggression were significantly intercorrelated. However, there were some interesting gender differences in the strengths of the intercorrelations and exceptions to this general finding. First, the relation between sexual coercion perpetrated and psychological aggression received was significantly stronger for males than for females ($z = 2.59, p < .01$), as was the relation between sexual coercion perpetrated and physical aggression received ($z = 2.61, p < .01$). Second, there was no relation between psychological aggression perpetrated and sexual coercion received for males, nor was there a relation between physical aggression perpetrated and sexual coercion received for either males or females.

DISCUSSION

The present study replicates and extends the research in psychological, physical, and sexual aggression in many ways. We will discuss the results by type of aggression.

Psychological Aggression

Previous gender differences in psychological aggression (e.g., Kasian & Painter, 1992; Molidor, 1995) were partially replicated in this study. Although there were no gender differences in the percentages of males and females who reported perpetrating and receiving psychological aggression, females who reported perpetrating psychological aggression had used more psychologically aggressive acts within the previous year than did males.

We also assessed the relationship between physical and psychological aggression. Consistent with previous research (e.g., Follingstad, Rutledge, Berg, Hause, & Polek, 1990; Molidor, 1995; Murphy & O'Leary, 1989; Walker, 2000), we found that the perpetration and receipt of psychological aggression was significantly related to the perpetration and receipt of physical aggression. Physical aggression tends to coexist with psychological aggression.

Physical Aggression

Further evidence that females and males report perpetrating and receiving similar amounts of physical aggression in romantic relationships is also provided in this study. There were no gender differences in the percentages of males and females who perpetrated or received physical aggression, nor were there gender differences in the number of physically aggressive acts perpetrated or received within physically aggressive relationships. These findings held for both total and minor physical aggression and are very important with regard to previous criticisms of the CTS.

For example, one major criticism advanced by Kurz (1993) was that the physical aggression items on the CTS were on such a broad continuum that it was impossible to discriminate among different types of violence. The examples she gave referred to items on the original scale, namely "bit, kicked, or hit with a fist" and "hit or tried to hit with an object." On the revised scale, items are more delineated such that "kicked," "punched or hit partner with something that could hurt," and "threatened to hit or throw something at partner" are now three separate items. Thus, even with Kurz's criticism addressed, females and males still have equal rates of physical aggression towards their partners.

The new version of the CTS also addresses the criticism that Straus only included a limited number of violent acts in his original scale (e.g., Dobash & Dobash, 1984). This criticism is ironic for two reasons:

1. one group of researchers who advanced it created a scale to measure violence in relationships that was remarkably similar to the CTS (Dobash & Dobash, 1984), and
2. one researcher, who is an outspoken critic of the CTS, remarked that "it is important to be precise in describing the actual acts that occur" (Walker, 1990, p. 23), which is precisely what the CTS was designed to do.

Nonetheless, to address this criticism, Straus and associates (1996) expanded the physical aggression subscale in the CTS2 to include more items, and again, our results confirm that even with this expanded version, females and males still have equal rates of physical aggression towards their partners.

A third criticism that the CTS2 partly addresses is that the CTS merely counts acts of violence but ignores other control factors such as verbal abuse and using violence against children, property, and pets (e.g., Kurz, 1993). The CTS2, as with the previous version of the CTS, does include a psychological aggression subscale, and as mentioned previously, the results of this and other studies show that in comparison to males, females are just as likely, if not more likely, to perpetrate psychological aggression in their relationships. Although the CTS2 does not measure violence towards children or pets as a control tactic, there is an item addressing violence towards property ("destroyed something belonging to partner"). Inspection of this individual item shows again that there are no gender differences in the perpetration of it, and if anything, males are victimized by it more often than females are.

The only exception to the finding that females and males are equally likely to perpetrate and receive physical aggression in this study was with regard to the receipt of severe physical aggression: a significantly higher percentage of males than females reported receiving severe physical aggression. This higher percentage of female perpetration can be accounted for by the punching and kicking items. Females report that they perpetrate these acts more than they are victimized by them; males report that they are the victims of these acts more than the females report that they are the victims of these acts; and males report that within their relationships, they are more often the victims than perpetrators of these acts. This finding stands in contrast to the fact that there were no significant differences in the percentages of males and females who reported perpetrating severe physical aggression. There can be several reasons for these conflicting results. First, males might be biased to report more severe physical aggression overall. As can be seen from Table 1, there is a trend towards males also reporting more perpetration of severe physical aggression, and they also report perpetrating and receiving more severe physically aggressive acts. Although these trends are not significant, there is a low base rate for this phenomenon and therefore low statistical power. It could therefore be the case that males are biased towards reporting more severe physical aggression. However, this interpretation would only hold if they also had a trend towards reporting more minor physical aggression and more physical aggression overall, but, as Table 1 shows, this is not the case. Another possible interpretation is that females are underreporting their victimization (or even perpetration) of severe physical aggression, possibly out of embarrassment. However, this interpretation is also not likely considering that it was an anonymous survey and participants had no problem reporting their perpetration or victimization of overall or minor physical aggression. Finally, it could

be that because the males and females in this study were not dating each other that these numbers are correct—in our sample of undergraduate psychology students, males experience more severe physical aggression in their relationships than females.

One important criticism of the CTS to consider relates to the meaning of the aggressive acts assessed by it. That is, Straus originally distinguished severe from minor acts by stating that the severe acts were the ones most likely to cause injury to the victim. However, critics argue that this distinction does not take into account gender differences in relative size and strength, and thus, understates males' minor violence and overstates females' severe violence. That is, a slap from a male to a female would probably hurt much more than a slap from a female to a male, and a punch from a female to a male is much less severe than a punch from a male to a female. These issues are important to consider when interpreting the result of the greater victimization of severe physical aggression of males.

Overall, however, our results are consistent with hundreds of studies conducted in the past 30 years that used the CTS to assess aggression within romantic relationships (e.g., Archer, 2000; Morse, 1995; O'Leary et al., 1989; Straus & Gelles, 1986; Straus & Gelles, 1988). With the new expanded version of the physical aggressiveness subscale, similar results emerge: approximately the same percentage of females and males perpetrate approximately the same amount of physically aggressive acts within their relationships. Critics could argue, however, that we need to consider the meaning, context, interpretations, and consequences of this physical aggression before we conclude that males and females are equal victims of physical aggression in romantic relationships. For example, Mills (1984) argues that the meaning of spousal violence may be very different for males and females, especially because the wifely role seems to be more central to a woman's sense of self than the husbandly role is for a man's sense of self. She found that women suffer a greater loss of self-esteem as a result of spousal abuse. However, the psychological consequences of partner abuse against men have not been sufficiently studied to fully validate this point, and those studies that have assessed the psychological consequences of partner abuse against males have found that males do suffer psychologically from the abuse they receive at the hands of their partners, sometimes severely so (see Hines & Malley-Morrison, 2001, for a review). Unfortunately, the present study did not look at the psychological consequences of the victimization of physical aggression and therefore cannot address this argument.

Further, Kurz (1993) and Pagelow (1985) argue that there is another major difference between physical aggression against women and physical aggression against men: it is easier for men to leave an abusive marriage. Women, they argue, tend to suffer more serious consequences of abuse because they lack social and economic power in a society that values males over females. Therefore, they are more dependent upon their husbands. This argument does not apply, however, to the present study because the majority of the couples assessed (97%) were in noncohabitating dating relationships. Thus, the women in our sample were not economically dependent on the men, and leaving an abusive relationship should have no substantial economic reprisals. In other words, the meaning of the abuse in this study should not differ in this respect for the males and females: they can both leave at any time.

Other issues relating to context and meaning of abuse may cause differential effects for males and females. For instance, Dobash, Dobash, Wilson, and Daly (1992) assert that the CTS does not measure precipitating events, the sequence of events within the argument itself, the history of the relationship, and the larger sociohistorical context in which the

relationship takes place. We did not measure these variables in this study, and the first three variables could conceivably affect males and females, in that it is equally likely that either partner precipitated the argument, struck the first blow, and/or was the dominant and primarily abusive partner in the relationship. The last variable, the larger sociohistorical context, would probably result in females suffering more severe consequences than males because the aggression is taking place in a society in which females are already subordinated. However, the greater suffering of females as opposed to males as a result of physical aggression does not mean that the males do not suffer, nor does it mean that we should ignore the possible consequences to males.

Critics of the CTS also argue that the scale ignores the relative size of males versus females. Males are, on average, larger and stronger than females and can therefore defend themselves better against a physical attack and are less prone to injury (e.g., Pagelow, 1985). We examined injuries in the present study, and contrary to previous research (e.g., Cantos et al., 1994; Cascardi et al., 1992; Stets & Straus, 1990), we found no gender differences in the percentages of males and females who were physically injured by their partners, nor in the amount of injuries within injurious relationships. Furthermore, we found no gender differences in the percentages of injuries within physically aggressive relationships. Perhaps the finding of no gender differences was due to the low rate of injuries in our sample. That is, only 10 males and 16 females reported inflicting injuries, and only 14 males and 11 females reported receiving injuries. Perhaps with a larger sample size, gender differences would emerge because there would be more power to detect a difference. But it is noteworthy that both males and females indicate that females are inflicting more injuries than males.

Finally, the present study addresses one last criticism of the CTS: that the majority of women physically aggress against their male partners out of self-defense, which is not assessed on the CTS (e.g., Kurz, 1993; Saunders, 1986). We addressed this criticism in two ways. First, analyses of the relationship types show that, consistent with previous research (e.g., Morse, 1995; O'Leary et al., 1989) and by both male and female reports, more relationships are marked by female-only physical aggression (10%-14%) than male-only physical aggression (3%-8%). Furthermore, 21% of the relationships were marked by "mutual aggression." Critics would argue that these relationships are not actually "mutually aggressive"; what is really occurring is that the females are acting out of self-defense. However, our analysis of the CTS2 using difference scores provides evidence against this assertion. The difference between a respondent's reported amount of physical aggression received and the reported amount of physical aggression perpetrated gives an indication of who, within the reported relationship, is the primary aggressor. Females' difference scores were positive whereas males' were negative, suggesting that within these relationships, both males and females reported that females were perpetrating more physical aggression than their partners were. In fact, the significantly higher difference scores for females than males indicates that females are more likely to report that they perpetrate more aggression than do their partners.

Looking at the individual items on the physical aggression subscale of the CTS2 shows that the higher difference score for females may be accounted for by the items of "throwing something at the partner that could hurt," "pushing or shoving the partner," and "slapping the partner." Females report that they perpetrate these acts more often than the males report that they do, and that they perpetrate these acts more often than they are the recipients of them, whereas males report that they are the victims of these acts more often than they perpetrate them. Thus, it appears that females are not solely acting out of self-defense.

However, because motives were not directly assessed, caution should be taken when interpreting these results. For example, if a couple were to get into an argument where the male "beat up" the female (one act of physical aggression) and the female "kicked" and "slapped" the male to defend herself (two acts of physical aggression), the female would be the primary aggressor according to results obtained through difference scores. However, closer inspection of the data shows that very few participants (male or female) were the recipients of the most severe acts (i.e., using a knife or gun, beating up, burning, choking) that would precipitate this kind of fighting back. Furthermore, both males and females were perpetrators and victims of these acts, and females were more likely to use the other severe physical aggression acts (i.e., punching, kicking). Therefore, it is unlikely that this scenario of a female defending herself against a male and being labeled as the primary aggressor was present in this study. Furthermore, the fact that females report using more physically aggressive acts than their partners is meaningful.

Thus, this study provides further evidence that the majority of females who physically aggress in romantic relationships are not simply acting out of self-defense. Several researchers who have assessed motives for physical aggression in romantic relationships have found that anger, retaliation, jealousy, confusion, and efforts to gain control are the reasons most cited by females for their physical aggression (Cate, Henton, Koval, Christopher, & Lloyd, 1982; Follingstad, Wright, Lloyd, & Sebastian, 1991; Henton, Cate, Koval, Lloyd, & Christopher, 1983; Makepeace, 1981). Others, critical of the CTS, argue that females who aggress against their partners are acting in self-defense (e.g., Saunders, 1986; Walker, 2000). The discrepancy is probably due to differences in the samples being studied. Critics of the CTS tend to study battered women, and although studies show that the majority of battered women physically aggress against their partners in self-defense, the majority of women involved in aggressive relationships are not battered women. The relationships assessed in the present study are everyday relationships between college students, and were not marked by extreme battering of one partner. Therefore, the results from previous studies of community samples are confirmed by our study—the aggressive women in this study were not primarily acting out of self-defense.

Sexual Aggression

The sexual coercion subscale allowed us to expand on previous research in this area in many ways. First, we were able to estimate the amount of sexual coercion within the context of ongoing romantic relationships. Most research in the area of sexual coercion and aggression has assessed these acts over the course of a lifetime without asking the relationship between the perpetrator and the victim (e.g., Koss et al., 1987; Schubot, 2001; Struckman-Johnson, 1988, Zweig et al., 1997). Although the overall lifetime occurrence of sexual coercion and aggression is valuable to study, it is also important to know how much sexual coercion and aggression are occurring in presumably loving, romantic relationships. In addition, many researchers assume that males who were the recipients of sexual coercion or aggression were victimized by other men; however, the gender of the perpetrator was never assessed in these studies (e.g., Zweig et al., 1997). The present study provides evidence that not only is there a substantial minority of males who sexually coerce women, but there is also a substantial minority of females who sexually coerce men. Our observed rate of female coercion (13.5%) and the finding that females tend to use verbal means to obtain anal, oral, or vaginal sex is consistent with previous research (Russell & Oswald, 2001).

The findings that a significantly higher percentage of males report perpetrating sexual coercion and that, within sexually coercive relationships, males report using more sexually coercive acts was expected based upon the research that shows that over the course of a lifetime, females report being the victims of sexual assault more often than do males (e.g., Koss et al., 1987; Schubot, 2001; Struckman-Johnson, 1988; Zweig et al., 1997). However, this finding is discrepant with our findings of no gender differences in the amount of sexual coercion received, and that within sexually coercive relationships, males report receiving more sexually coercive acts than females report receiving. Therefore, although males report perpetrating more sexual coercion than females, females do not report experiencing more sexual coercion than males. These comparisons, however, are not for the same relationships, which may account for the discrepancy. Similarly, there may be a bias toward males overestimating and/or females underestimating the use and receipt of sexual coercion. Hence, the difference scores are more informative: within their relationships, both males and females report that males are more likely to be the perpetrator of sexual coercion.

This discrepancy may also be accounted for by differences in three items, "made partner have sex without a condom," "insisted on oral or anal sex when partner did not want to," and "insisted on intercourse when partner did not want to." For these items, females report much less perpetration than the males report receiving. A possible reason for this inconsistency may lie in the participant's interpretation of the words "made" and "insist." Females may be defining these terms in a different manner than are the males. In addition, it may be difficult for the participants to fully understand their partners' wishes for sexual activity. Males report that their female partners insisted on oral/anal sex and intercourse when the males did not want to more often than the females report that they insisted on these sexual acts when their male partners did not want to. Females may not fully know their partner's desires for sexual activity at the time and may not know that their partners really did not want to participate in that act. Alternatively, the male partners may not be clearly communicating their desire for no sexual activity.

Finally, the CTS2 allowed us to assess the relations between the psychological and physical aggression subscales and the sexual coercion subscales. A different picture emerged for males and females. For males, those who are sexually coercive are also involved in physically and psychologically aggressive relationships. Females who are sexually coercive are also involved in physically and psychologically aggressive relationships, although the relation between sexual coercion and the other aggression variables is not as strong as for males. Moreover, those females who are sexually coercive are not physically aggressive. This fact is consistent with our finding that females who are sexually coercive use verbal means to obtain sex from their partners. Unlike males who were sexually coercive, sexually coercive females did not use threats or force to make their partners have sex with them; they insisted on the acts instead. Males tended to use all forms of sexual coercion to make their partners have sex with them (insisting, threats, and force), although, as with the females, they used verbal means more often than physical means.

The relation between sexual coercion received and the psychological and physical aggression subscales also provided an interesting picture. Males who received sexual coercion apparently were not in relationships where there was a high amount of psychological and physical aggression: there was no relation between sexual coercion received and the physical and psychological aggression subscales for the males in this study. For females, those who received sexual coercion were in physically and psychologically aggressive relationships. However, there was no relation between sexual coercion received

and physical aggression perpetrated. This finding does not support the theory that the high rate of female physical aggression is a result of the high rate of sexual aggression that they are being victimized by (Malik, Sorenson, & Aneshensel, 1997). In other words, researchers have argued that females perpetrate physical aggression because they are being sexually aggressed against. Our findings provide evidence against this theory: females who physically aggress are not the recipients of sexual coercion.

SUMMARY

The present study replicated previous studies that show higher rates of psychological aggression by females and equal rates of physical aggression by males and females. Importantly, our replication of this finding with the CTS2 addresses many of the methodological concerns that made critics doubt previous findings. We also replicated findings that physical and psychological aggression tend to co-occur. Moreover, by introducing a new way of analyzing the CTS2 (a difference score), we provide further evidence that females who physically aggress are not always acting out of self-defense. In addition, we were able to assess gender differences in the rate of injuries using the new injury subscale, and contrary to previous research, the females in this study were not injured at a higher rate than the males, although this finding may be due to the small number of participants (male and female) who were injured by their partners. Another unique aspect of this study was that we were able to assess the amount of sexual coercion occurring within seemingly loving, romantic relationships. As expected, males reported perpetrating more sexual coercion than females, although females also reported using verbal means to coerce their partner into having sex. Moreover, sexual coercion perpetrated or received is not related to the physical aggression perpetrated by females, and males who are sexually coercive are involved in psychologically and physically aggressive relationships, whereas males who receive sexual coercion are not. Future research with different age groups and a larger sample size is needed to replicate these findings. In addition, using different scales to assess psychological, physical, and sexual aggression would be a means of further validating these results. Finally, consequences of these aggressive acts other than physical injuries also need to be assessed (e.g., psychological consequences, such as depression, stress, anxiety, and alcohol and substance use).

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