BREAKUP DISTRESS IN UNIVERSITY STUDENTS

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ABSTRACT

A sample of 192 university students who had experienced a recent breakup of a romantic relationship was divided into high versus low score groups based on the Breakup Distress Scale. Females had higher Breakup Distress Scale scores. The group who had high Breakup Distress Scale scores reported having less time since the breakup occurred, did not initiate the breakup, reported that the breakup was sudden and unexpected, felt rejected and betrayed, and had not yet found a new relationship. They also scored higher on the Intrusive Thoughts Scale, on the Difficulty Controlling Intrusive Thoughts Scale, on The Sleep Disturbance Scale, and on the depression (CES-D) and anxiety scales (STAI). In a regression analysis, the most important predictors of the Breakup Distress scores were the depression score (CES-D), the feeling of being betrayed by the breakup, shorter time since the breakup occurred, and a higher rating of the relationship prior to the breakup. This explained as much as 37% of the variance, suggesting that these factors are important contributors to relationship breakup distress.

Breakup distress in university students may take the form of *complicated grief,* an intense and prolonged period of grief following a loss (Horowitz, Siegel, Holen, Bonanno, Milbrath, & Stinson, 1997). Typically complicated grief is associated with a death, although many of the complicated grief symptoms are similar to those of heartbreak following a romantic relationship breakup. The criteria for complicated

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grief have been defined as intensive intrusive thoughts, pangs of severe emotion, distressing yearnings, feeling excessively alone and empty, unusual sleep disturbances, and loss of interest in personal activities (Horowitz et al., 1997). The term "complicated" reflects the unresolved complications of normal functioning as assessed by the Inventory of Complicated Grief (Prigerson, Maciejewski, Reynolds, Bierhals, Newsom, Fasiczka, et al., 1995).

In a study that measured both uncomplicated grief (based on the Texas Revised Inventory of Grief by Faschingbauer, 1981) and complicated grief (based on the Inventory of Complicated Grief by Prigerson et al., 1985), complicated grief scores were more related to anxiety, depression, social functioning, and general health than symptoms of uncomplicated grief (Boelen & van den Bout, 2008). In another study on complicated grief, 55% of the sample were depressed (Simon, Shear, Thompson, Zalta, Perlman, Reynolds, et al., 2007). Those who had comorbid complicated grief and depression reported higher levels of grief and more sleep disturbances and anxiety symptoms.

In a study on college students, complicated grief symptoms were assessed by the Inventory of Complicated Grief, and insomnia and associated sleep behaviors were also self-reported (Hardison, Neimeyer, & Lichstein, 2005). The rate of insomnia was significantly higher in the complicated versus the uncomplicated grief samples (22% versus 17%), and sleep disturbances were related to intrusive thoughts about the loss as well as images of the deceased in their dreams. In a study on insomnia itself, the insomnia group experienced more images regarding "intimate relationships" as compared to the good sleeper group (Nelson & Harvey, 2003). Some have suggested that controlled intrusive thoughts prior to sleep become intrusive images during sleep, ultimately leading to insomnia.

Many of the complicated grief symptoms were reported in at least one study on romantic relationship breakups, although it was a study on adult women, not university students (Najib, Lorberbaum, Kose, Bohning, & George, 2004). For this study, women who were grieving over the loss of a romantic relationship and were experiencing intrusive thoughts showed brain activity in different regions during intrusive versus neutral thoughts. They also rated their mood states including sadness and anxiety and their intrusive thoughts as being excessive.

Background literature on the variables that appeared to be affected by romantic breakups suggested the following: *Gender differences* in breakup distress have rarely been reported. But, in one study on uni-

versity students, men reported more difficulty than women in recovering from broken relationships (Knox, Zusman, Kaluzny, & Cooper, 2000). In another study, women were more distressed (Fisher, 2004). The latter finding would be expected given that women are more readily depressed by stressful events (Nolen-Hoeksema, 2000).

Research on the *initiator status* (i.e., who ended the relationship) also yielded mixed results. While one researcher reported that the level of distress was unrelated to who ended the relationship (self or other) (Waller, 2008), another group suggested that both men and women who were rejected experienced more depression, loss of self-esteem and intrusive thoughts than those who did the rejecting (Perilloux & Bus, 2008). In another study, depression occurred in only those individuals who had been rejected, not in those who initiated the rejection (Ayduk, Downey, Testa, & Yen, 1991). In an experimental study comparing those who saw a scenario in which they were rejected versus a scenario in which they did the rejecting, higher levels of breakup distress were noted in those who saw the scenario of being rejected (Waller, 2008).

The experience of *rejection* is fairly common. In a survey of Case Western Reserve University, 95% of the students reported that they had rejected someone who was in love with them, and 93% said that they had been rejected by someone they loved (Baumeister, Wotman, & Stillwell, 1993). Rejection in romantic relationships is said to be so painful that people are "not only in agony but incapacitated" (MacDonald & Leary, 2005). Rejection has also been accompanied by increased blood pressure and cortisol levels (Stroud, Tranofsky-Kraff, Wilfley, & Salovey, 2000), by analgesia or numbing (MacDonald & Shaw, in press), and, paradoxically, by activation of the same part of the brain that is activated by love (Eisenberger & Lieberman, 2003). Rejection also has characteristics that are similar to drug withdrawal. In an fMRI study, rejected individuals showed signs of drug withdrawal including anxiety, depression, crying, loss of appetite, and irritability, and their fMRIs were similar to those on cocaine or opioids (Bartels & Zki, 2000). Because of the biochemical reaction, for example endorphin release, rejection, not unlike complicated grief, has been thought to have addiction-like properties and has been referred to as "one of nature's most powerful aphrodisiacs" (Fisher, 2004).

Betrayal involves deception and the breaking of a presumed trust or confidence. The social-emotional pain that follows is said to be very similar to physical pain, and the trauma that accompanies the anger of betrayal has been likened to Post Traumatic Stress Disorder (Fisher, 2004).

Not surprisingly, the amount of breakup distress is thought to be related to the *closeness and the duration of the broken relationship.* In one study, 3 of the 10 factors explored including closeness of the relationship, duration of the relationship, and ease of finding an alternative partner, reliably and independently predicted the intensity and duration of emotional distress following the breakup (Simpson, 1987). At least one other investigator has reported that greater levels of love are associated with a decreased probability of recovering during the study (Sbarra, 2006).

The amount of *time since the breakup* seems to be inversely related to the amount of breakup distress, such that a shorter period of time since the breakup is related to greater distress (Knox et al., 2000; Moller, Fouladi, McCarthy, & Hatch, 2003). In the Knox et al. (2000) study, the most helpful factors in getting over a broken heart were time and a new partner.

Finding a desirable new partner has seemed to be an important variable in at least two studies (Knox et al., 2000; Simpson, 1987). These findings are perhaps not surprising given the importance attributed to relationships by several people including attachment theorists (Shear & Shair, 2005) and those who view relationships as regulators for daily activities and mood (Field, 1985; Hofer, 1984).

Inasmuch as the former partner can be a source of dysregulation, even when viewed from photos (Kross, Egner, Ochsner, Hirsch, & Downey, 2007), *continuing contact with the former partner* has had disorganizing effects (Sbarra & Emery, 2005). Given these data, it is surprising that at least in one study, equal numbers of university students reported either remaining friends or not seeing their previous partners (Knox et al., 2000).

Intrusive thoughts are one of the most painful heartbreak experiences inasmuch as they are continual, uncontrollable, and often distressing (Peirce, 2007). Some have explained intrusive thoughts as occurring because individuals have unrealistic beliefs and expectations that have to be reconciled when something very unexpected happens like heartbreak (Wegner, Schneider, Carter, & White, 1987). In this sense, they are thought to be a cognitive mechanism for absorption of change or a complete shift in one's worldview (Peirce, 2007). However, they contribute to anxiety, with vigilance and uncertainty contributing to anxiety symptoms (Nolen-Hoeksema, 2000). Some have suggested that it would not make adaptive sense to waste energy by repeatedly having intrusive thoughts unless they served an adaptive purpose (Peirce, 2007).

Much of the research on intrusive thoughts has focused on whether *suppression of intrusive thoughts* increases or decreases the intrusive thoughts. Most of this literature suggests that mentally suppressing the idea of "white bears" causes a rebound effect, i.e., more thoughts about "white bears" (Wegner et al., 1987). Thus, suppression appears to have paradoxical effects in that it produces the very thought that is to be avoided (Marcks & Woods, 2004). Suppression seems, then, to result in increased intrusive thoughts (Salkovskis & Campbell, 1993). Suppression of intrusive thoughts can lead to depression (Nolen-Hoeksema, 1991) and to insomnia (Hobson et al., 2000). The practice of suppressing thoughts during wakefulness often leads to their emergence during dreams, which some have said happens for the sake of "giving the person peace during awake time" (Hobson, Pace-Schott, & Stickgold, 2000).

Insomnia and *sleep disturbances* have been reported in as many as 43% of bereaved individuals and as long as 13 months after the loss (Ford & Kamerow, 1989). Insomnia is thought to be more prevalent in those experiencing complicated versus uncomplicated grief (22% versus 17%) Hardison et al., 2005). Poor sleep has been characteristic of bereavement-related depression, whereas good sleep quality has accompanied "successful" bereavement (McDermott, Prigerson, Reynolds, Houck, Dew, Hall, et al., 1997; Reynolds, Hoch, Buysse, Houck, Schlernitzauer, Pasternak, et al., 1993). In another study, comorbid depression worsened sleep quality (Germain, Caroff, Buysse, & Shear, 2005).

The dissolution of a romantic relationship was one of the most commonly nominated "worst events" in a large phone survey of traumatic events and a prospective risk factor for the onset of *Major Depression Disorder* (Monroe, 1999). In one study, over 40% experienced clinical depression, with some 12% experiencing moderate to severe depression (Mearns, 1991). People have also been noted to have heart attacks or strokes following breakups and the ensuing depression (Rosenthal, 2002). This has been attributed to decreasing dopamine levels associated with depression (Panksepp, 1998). Although women may report more severe depression and hopelessness, being twice as likely to experience depression as men, men are three to four times more likely to commit suicide after a romantic rejection (Mearns, 1991; Ustun & Sartorius, 1995). Further research on rejection suggests that depression related to rejection occurs in individuals who have been rejected but not in those who initiated the rejection (Ayduk et al., 2001).

Anxiety is often comorbid with depression, and anxiety was significantly associated with relationship dissolution in a survey of more

than 5,000 internet respondents (Davis, Shaver, & Vernon, 2003). In this study, anxiety was labeled attachment-related anxiety. This anxiety was associated with greater preoccupation with the lost partner, more intrusive thoughts about the lost partner, more extreme physical and emotional distress, and exaggerated attempts to re-establish the relationship. Individuals with high scores on anxiety measures have tended to have lower thresholds for physical pain (Wade & Price, 2000), have generally been more rejection sensitive (Downey & Feldman, 1996), and have tended to have higher anxiety levels following breakups of close relationships (Feeney, 1999).

Breakups are notably frequent in university students (68% in our university sample) and might be expected to cause negative mood states and the kind of breakup distress that was noted for adult women (Najib et al., 2004). The purpose of the present study was to assess breakup distress and related factors that might contribute to breakup distress in university students. The Inventory of Complicated Grief was adapted to measure breakup distress. Other variables that had been related to relationship breakups in both adult and university student research were assessed including: (1) who initiated the breakup (self or other); (2) whether it was sudden/unexpected; (3) whether the student felt betrayed by the breakup; (4) whether the student felt rejected by the breakup; (5) depression; (6) anxiety; (7) intrusive thoughts; (8) difficulty controlling intrusive thoughts; (9) sleep disturbances; (10) how positively the relationship was viewed prior to the breakup; (11) duration of the relationship; (12) time since the breakup; and (13) whether the respondent was in a new relationship. High and low breakup distress groups were expected to differ on these variables, and these variables, in turn, were expected to explain a significant amount of the variance in breakup distress.

METHOD

Participants

The initial sample was 283 university students (78% female) who averaged 21.3 years (R = 17-25) of age and were distributed 70% Hispanic (of diverse origins), 12% African American, 10% Caucasian, and 8% other. Of this sample, 192 (68%) had experienced a breakup 3.3 months ago on average after a relationship that averaged 3.6 months duration. The students had experienced 2.5 breakups on average, 1.7 of them having been with the same partner.

Procedures

University students were recruited for this anonymous questionnaire study from psychology classes at a southeastern university. The students were given extra credit for their participation. During one of their class sessions, the students completed a 120-item questionnaire, which was comprised of demographic questions, items related to the students' breakup, and the Breakup Distress Scale, a Relationship Rating Scale, an Intrusive Thoughts Scale, a Difficulty Controlling Intrusive Thoughts Scale, a Sleep Disturbance Scale, Depression (CES-D), and Anxiety (STAI) scales.

The sample was first divided into two groups including those who had experienced breakups (N = 192) versus those who had not (N = 91). No differences were noted between these two groups on any of the demographic variables tested (gender, ethnicity, age, and grade). Further, no group differences were noted on the dependent variables. Both groups had notably high scores on the scales we used including the Intrusive Thoughts Scale, the Difficulty Controlling Intrusive Thoughts Scale, the Sleep Disturbances Scale, and the depression (CES-D) and anxiety (STAI) scales.

The breakup sample (N = 192) was then divided into high and low breakup distress groups based on a median split on the Breakup Distress Scale scores. No differences were noted between these groups on any of the demographic variables (ethnicity, age, and grade) except for gender. For the high and low distress groups respectively: (1) age averaged 24.99 and 23.27; (2) grade averaged 13.61 and 13.32; and (3) ethnicity was distributed Hispanic (67% and 70%), Caucasian (16% and 12%), African American (12% and 14%), and other (5% and 4%) (all ps non-significant). The high Breakup Distress Scale score group had a proportionately greater number of females than the low distress group (79% vs. 73%, $\chi^2 = 5.03, p < .01$), and females had higher scores on the Breakup Distress Scale (M = 10.19 vs. 7.06, $F = 6.41, p = .01$).

Measures

The *Breakup Distress Scale* (BDS) was adapted from the Inventory of Complicated Grief (ICG) (Prigerson et al., 1995). The ICG was an outgrowth of research that found certain symptoms of grief to be distinct from symptoms of depression and anxiety and, as a group, to predict several types of enduring functional impairments. The seven symptoms that loaded highly on the grief factor were: preoccupation with thoughts of the deceased, crying, searching and yearning for the deceased, disbelief about the death, being stunned by the death, and not accepting the death (see Prigerson et al., 1995). The final ICG scale contained 19 items, the internal consistency of which was high

(Cronbach's $\alpha = 0.94$). The ICG total score showed a fairly high association with the BDI total score ($r = 0.87$).

The Breakup Distress Scale was adapted from the ICG by referring to the breakup person instead of the deceased person, and only 16 of the 19 ICG items that were appropriate to breakups were included. A different rating scale was also used, i.e., a Likert scale with responses ranging from 1 (not at all) to 4 (very much so) including: (1) I think about this person so much that it's hard for me to do things I normally do; (2) Memories of the person upset me; (3) I feel I cannot accept the breakup I've experienced; (4) I feel drawn to places and things associated with the person; (5) I can't help feeling angry about the breakup; (6) I feel disbelief over what happened; (7) I feel stunned or dazed over what happened; (8) Ever since the breakup it is hard for me to trust people; (9) Ever since the breakup I feel like I have lost the ability to care about other people or I feel distant from people I care about; (10) I have been experiencing pain since the breakup; (11) I go out of my way to avoid reminders of the person; (12) I feel that life is empty without the person; (13) I feel bitter over this breakup; (14) I feel envious of others who have not experienced a breakup like this; (15) I feel lonely a great deal of the time since the breakup; and (16) I feel like crying when I think about the person.

The *Intrusive Thoughts Scale* (ITS) was comprised of 4 items rated on a Likert scale from 1 (not at all) to 4 (very much so) including: (1) Approximately how often per day would you say the intrusive thoughts occur?; (2) How distressing are the intrusive thoughts?; (3) How vivid are the intrusive thoughts?; and (4) How much does the event appear to be happening now instead of happening in the past?

The *Difficulty Controlling Intrusive Thoughts Scale* (DCITS) was adapted from the Thought Control Questionnaire (TCQ) Wells & Davies, 1994). The TCQ was developed by Wells and Davies (1994) to measure individual differences in the use of thought control strategies. The TCQ consists of 30 statements summarized by five factors as follows: reappraisal, distraction, punishment, social control, and worry. The DCITS was adapted from the TCQ by selecting 19 of the 30 items and rating them on a different scale, i.e., a Likert scale ranging from 1 (not at all) to 4 (very much so) including: (1) I get angry at myself for having intrusive thoughts; (2) I tell myself not to think about them now; (3) I tell myself not to be so stupid; (4) I try to push the thoughts out of my head; (5) I say, "Stop" to myself; (6) I occupy myself with work instead; (7) I keep myself busy; (8) I do something I enjoy; (9) I try to block them out by reading, watching T.V., or listening to the radio; (10) I do something physical; (11) I focus on different negative

thoughts; (12) I worry about more minor things; (13) I replace an intrusive thought with a more trivial bad thought; (14) I dwell on other worries; (15) I think about past worries instead; (16) I focus on the thoughts; (17) I ruminate about the thoughts; (18) I count sheep or other things; and (19) I get out of bed and I write about them.

The *Sleep Disturbances Scale* was comprised of 4 items rated on a Likert scale from 1 (none) to 4 (a lot), including: (1) Trouble falling asleep last night; (2) Trouble with disrupted sleep last night; (3) Amount of sleep last night; and (4) Amount of exhaustion this morning.

The *Center for Epidemiology Studies-Depression Scale* (CES-D) (Radloff, 1977) is a 20-item scale that assesses the frequency of depressive symptoms within the last week. With scores ranging from 0 to 60, a cut-off score of 16 is used for classifying depression. With only a 6% false positive and 36% false negative rate (Myers & Weissman, 1980), this scale has been shown to be reliable and valid for diverse demographic groups.

The *State Anxiety Inventory* (STAI) (Spielberger, Gorsuch, & Lushene, 1970) is comprised of 20 items and assesses the intensity of anxiety symptoms. The scores range from 20 to 90, and the cutoff for high anxiety is 48. Research has demonstrated that the STAI has adequate concurrent validity and internal consistency.

RESULTS

Chi Square tests

Chi square tests were first conducted on the number of students who experienced variables that might contribute to breakup distress. As can be seen in Table 1, the following results emerged: (1) equal numbers of students initiated or did not initiate the breakups; (2) a lower number of students mutually agreed to the breakup; (3) equal numbers of students did and did not experience the breakup as sudden/unexpected; (4) equal numbers felt or did not feel totally rejected; (5) more students experienced betrayal; (6) more students had hoped for permanence of the relationship; (7) fewer students experienced hope for renewal of the relationship; (8) more students reported that their former partner had a new relationship; and (10) more students reported that they no longer saw or talked with the person of the broken relationship.

ANOVAs were conducted on the Breakup Distress Scores for the Yes/No responses on primary variables that had been frequently mentioned in the adult relationship breakup literature. As for the first set of variables, the groups were split on their yes/no responses. As can

Table 1. Chi Square tests on the number of students who gave Yes/No responses on variables that might contribute to breakup distress

	Responses (N)	
Variables	Yes	No
Initiated Breakup	102	91
Both Agree	82	110
Sudden/Unexpected	90	102
Feel Totally Rejected	87	106
Feel Betrayed	110	82
Hope for Permanence Relat.	117	76
Hope for Renewal Relat.	57	136
New Relationship for Self	107	85
New Relationship for Other	84	96
See/Talk with Person Still	85	107

Variables	Chi Square	p
Initiated Breakup	.63	.43
Both Agree	4.08	.04
Sudden/Unexpected	.75	.39
Feel Totally Rejected	1.87	.17
Feel Betrayed	4.08	.04
Hope for Permanence Relat.	8.71	.003
Hope for Renewal Relat.	32.34	.000
New Relationship for Self	97.29	.000
New Relationship for Other	165.96	.000
See/Talk with Person Still	93.55	.000

be seen in Table 2, the following results emerged: (1) those who did not initiate the breakup had higher breakup distress scores than those who initiated the breakup; (2) those who experienced the breakup as sudden/unexpected had higher breakup distress scores than those who did not have that experience; (3) those who felt rejected had higher breakup distress scores than those who did not feel rejected; (4) those who felt betrayed had higher breakup distress scores than those who did not feel betrayed; and (5) those who were in a new relationship had lower breakup distress scores.

In another set of ANOVAs, the breakup sample was divided by a median split on Breakup Distress Scale scores. As can be seen in Table 3, the results revealed that those in the high breakup distress group: (1) had less time following the breakup; (2) assigned higher ratings to

Table 2. Means for Breakup Distress Scores for Yes/No responses on primary variables (Standard deviations in parentheses).

Primary Variables	No	Yes
Initiated Breakup	13.25 (10.02)	10.30 (9.37)
Sudden/Unexpected	10.31 (9.55)	13.21 (9.82)
Felt Rejected	8.78 (7.97)	15.28 (10.60)
Felt Betrayed	7.50 (7.83)	14.81 (9.97)
New Relationship	15.22 (10.35)	8.83 (8.26)

Primary Variables	F	p
Initiated Breakup	4.40	.04
Sudden/Unexpected	4.29	.04
Felt Rejected	23.38	.000
Felt Betrayed	29.99	.000
New Relationship	22.53	.000

Table 3. Means for high and low score Breakup Distress Groups (Standard deviations in parentheses).

Primary Variables	Low	High
Time Since Breakup (mos.)	3.62 (1.57)	2.99 (1.73)
Relat. Rating Pre-breakup (1-4)	2.36 (.92)	2.72 (.98)
Duration Relationship (mos.)	3.36 (1.70)	3.75 (1.54)
Intrusive Thoughts	2.88 (2.94)	5.63 (2.84)
Controlling Int. Thoughts	15.73 (10.61)	26.05 (8.18)
Sleep Disturbances	4.00 (2.39)	5.35 (2.97)
Depression (CES-D)	13.56 (9.30)	20.88 (11.22)
Anxiety (STAI)	38.36 (11.34)	45.69 (10.55)

Primary Variables	F	p
Time Since Breakup (mos.)	6.76	.01
Relat. Rating Pre-breakup (1-4)	9.07	.003
Duration Relationship (mos.)	34.19	.04
Intrusive Thoughts	15.27	.000
Controlling Int. Thoughts	27.20	.000
Sleep Disturbances	9.07	.003
Depression (CES-D)	8.15	.005
Anxiety (STAI)	9.05	.003

their relationships prior to the breakup; (3) had a longer relationship prior to the breakup; (4) had higher scores on the Intrusive Thoughts Scale; (5) had higher scores on the Difficulty Controlling Intrusive

Scale; (6) had higher sleep disturbances scores; (7) had higher depression (CES-D) scores; and (8) had higher anxiety (STAI) scores.

Correlation Analyses

Correlation analyses were then conducted between Breakup Distress Scale scores and those variables thought to contribute to breakup distress. As can be seen in Table 4, many of the variables that differed significantly on the ANOVAs were also significantly correlated with the Breakup Distress Scale scores. Female gender was positively correlated with breakup distress as was the other person being the initiator of the breakup. Other positively correlated variables with the Breakup Distress Scale scores were the sudden/unexpected nature of the breakup, being totally rejected, being betrayed, rating of the prior relationship, duration of the prior relationship, expected permanency of the prior relationship and hope to renew the prior relationship. The self-report scale scores were also positively related to the Breakup Distress Scale scores and with very high correlation coefficients including: (1) the Intrusive Thoughts Scale; (2) the Difficulty Controlling Intrusive Thoughts Scale; (3) the Sleep Disturbances Scale; (4) Depression (CES-D); and (5) the Anxiety (STAI) scores. Correlation coefficients ranged from .34 to .57 (all $ps < .05$). In the same correlation analysis, negative relationships were observed including that higher Breakup Distress Scale Scores were related to a shorter time since the breakup and lower Breakup Distress Scale scores were related to having a new relationship and the other person having a new relationship.

Stepwise Regression

As can be seen in Table 5, a Stepwise Regression Analysis on the Breakup Distress Scale scores revealed the following: (1) the depression (CES-D) scale scores contributed to 17% of the variance at step 1; (2) feeling betrayed by the breakup added 10% of the variance; (3) time since the breakup occurred (less time since the breakup) contributed to an additional 7% of the variance; and (4) the relationship rating prior to the breakup (a higher rating) contributed an additional 4% to the variance. The entire model explained 37% of the variance on the Breakup Distress Scale scores.

DISCUSSION

In this university student sample, two-thirds of the students had experienced a breakup approximately 3 months previously. Their rela-

Table 4. Correlations between Breakup Distress Scale scores and other variables.

Variables	r	p
Gender (female)	.16	.03
Initiator (other)	.15	.04
Sudden/Unexpected (Yes)	.15	.04
Both agree (No)	.10	NS
Totally rejected (Yes)	.33	.000
Betrayal (Yes)	.37	.000
Relationship rating	.21	.004
Duration relationship (mos.)	.16	.03
Expected permanency (Yes)	.26	.000
Hope to renew (Yes)	.17	.02
# Previous breakups same person	.09	NS
Time since breakup (less time)	.25	.001
Still see person (No)	.05	NS
New relat. for you (No)	.33	.000
New relat. for other (No)	.15	.04
Intrusive Thoughts	.57	.000
Difficulty Controlling Intrusive Thoughts	.55	.000
Sleep Disturbances Scale	.34	.000
Depression (CES-D)	.39	.000
Anxiety (STAI)	.36	.000

Table 5. Stepwise regression on Breakup Distress Scale scores

Step	1	2	3	4
R	.41	.52	.58	.61
R square	.17	.27	.33	.37
R^2 change	.17	.10	.07	.04
F for change	29.43	20.09	14.38	.854
p	.000	.000	.000	.004

Predictors in order of their entry

1 – Depression (CES-D) scores

2 – Feeling betrayed by the breakup

3 – Time since the breakup occurred

4 – Relationship rating prior to the breakup

tionships had lasted an average of 4 months, and they had an average of 2.5 relationships prior to the breakup, with 1.7 of the 2.5 being breakups with the same person. In general, both those who had and those who had not experienced breakups showed high scores on the intrusive thoughts, difficulty controlling intrusive thoughts, and sleep disturbances scales. Their depression and anxiety scores were also higher than the cut-off scores for depression and anxiety (based on the Center for Epidemiological Studies Depression Scale and the State Anxiety Inventory).

The breakup sample was then divided into high versus low breakup distress on the Breakup Distress Scale. These groups did not differ on demographic variables (ethnicity, age, grade) except for gender. As has been noted in the adult literature, the female students experienced greater breakup distress (Perilloux & Buss, 2008). Among those who had experienced a breakup, equal numbers of students reported that

they had initiated the breakup or that the other person had initiated the breakup. Equal numbers also suggested it was sudden and unexpected or not sudden and unexpected, and equal numbers said that they felt rejected or not rejected. Differences occurred on important variables including that a greater number of students reported that they did not agree to the breakup, that they felt betrayed, that they had thought that the relationship was permanent, that they had no hope to renew the relationship, that they no longer saw or talked with the person, that they had a new relationship but that their broken relationship partner did not have a new relationship.

The group with high versus low scores on the Breakup Distress Scale reported having less time since the breakup occurred. This finding is consistent with others reporting inverse relationships between the time since a breakup and the breakup distress (Knox et al., 2000; Mollere et al., 2003). As noted, in the Knox et al. (2000) study, time was one of the most helpful factors in getting over a broken heart. Those with higher Breakup Distress Scale scores also scored higher on the Intrusive Thoughts Scale. This finding was not surprising inasmuch as several investigators have suggested that intrusive thoughts are one of the most distressing heartbreak experiences (Peirce, 2007; Wegner et al., 1987), although they are also thought to be a cognitive mechanism for "absorption of change or a complete shift in one's worldview" (Peirce, 2007). The Difficulty Controlling Intrusive Thoughts Scale scores were also higher for the high-scoring Breakup Distress group. Although suppression of the intrusive thoughts often leads to increased intrusive thoughts (Salkovskis & Campbell, 1993), depression (Nolen-Hoeksema, 1991), and insomnia (Hobson et al., 2000), they are also thought to "give the person peace during awake time" (Hobson et al., 2000). The high scores on the Sleep Disturbances Scale for the high-scoring Breakup Distress Scale group are also consistent with the literature inasmuch as insomnia and sleep disturbances have been reported in as many as 43% of bereaved individuals (Ford & Kamerow, 1989) and are more prevalent in those experiencing complicated versus uncomplicated grief (Hardison et al., 2005).

Higher depression and anxiety scores in the more distressed group of students are consistent with the adult literature that has reported breakups being a prospective risk factor for the onset of Major Depression Disorder (Monroe, 1999). And anxiety is not only frequently comorbid with depression but was also significantly associated with relationship dissolution in a survey of more than 5,000 internet responders (Davis et al., 2003).

In the regression analysis, the most important predictors of the Breakup Distress Scale scores were the depression score (CES-D), feeling betrayed by the breakup, a shorter time since the breakup occurred, and a higher rating of the relationship prior to the breakup. These variables explained as much as 37% of the variance, suggesting that these factors were important contributors to the relationship breakup distress. These predictors might be expected inasmuch as depression has been associated with other kinds of grief, and betrayal has been noted to be similar to physical pain (Fisher, 2004). Time since the breakup has been cited as one of the most helpful factors in getting over a broken heart (Knox et al., 2000), and a higher rating of the relationship prior to the breakup would logically make for more breakup distress.

Therapies for Complicated Grief. Several therapies that have been effective with depression have also been tried with complicated grief and may be appropriate for breakup distress including Interpersonal Psychotherapy and Cognitive Behavioral Therapy. Although randomized control trials have not yet been conducted on psychotherapies with complicated grief, when Cognitive-Behavioral Therapy was compared to supportive counseling, Cognitive-Behavioral Therapy produced more improvement in complicated grief than did supportive counseling (Boelen, de Keijser, van den Hout, & van den Bout, 2007). Manualized psychotherapy has been developed specifically for complicated grief (Stroebe & Schut, 1999). Complicated Grief Therapy addresses the symptoms by retelling the story of the loss. This retelling procedure is called "revisiting." In a study comparing that form of treatment to Interpersonal Psychotherapy, both treatments significantly reduced complicated grief symptoms, but the response rate was greater for Complicated Grief Therapy than for Interpersonal Psychotherapy (51% versus 28%). In addition, the time to respond was shorter for Complicated Grief Therapy (Stroebe & Schut, 1999).

Potential underlying mechanisms for complicated grief and breakup distress. Risk factors for complicated grief are thought to include separation anxiety in childhood (Vanderwerker et al., 2006), neglect and abuse in childhood (Silverman, Johnson, & Prigerson, 2001), insecure attachment style (van Doorn, Kasl, Beery, Jacobs, & Prigerson, 1998), and lack of preparation for the loss (Barry, Kasl, & Prigerson, 2001). Several different approaches have been taken in researching potential underlying mechanisms for complicated grief including exploring parallels between the symptoms of loss in animals and humans, measuring physiological and biochemical reactions, conducting fMRIs during memory of loss situations and through studying genetic variation and affected genes.

For example, one fMRI study has been conducted on regional brain activity following a romantic relationship breakup (Najib et al., 2004). For this study, women who were grieving over the loss of a romantic relationship and were experiencing intrusive thoughts were monitored for regional brain activity during intrusive versus neutral thoughts. They also rated their mood states including sadness, anxiety, and anger during their intrusive and neutral thoughts. Women were selected because of the gender differences in brain correlates of sadness (George, Ketter, Parekh, Herscovitch, & Post, 1996) and because they generally have higher levels of rumination following breakups than do men (Nolen-Hoeksema, Grayson, & Larson, 1999). The women had lost their romantic partner within the preceding four months and were experiencing problems getting their ex-lover out of their mind and still feeling sad about the breakup. Their ratings for intrusive thoughts relative to neutral thoughts were higher for sadness, anger, anxiety, and generally negative emotions and lower for intrusive thoughts relative to neutral thoughts for happiness. Findings from the fMRI brain scans also suggested that grieving about a breakup is a mixed emotional state of sadness, anger, and anxiety.

These results highlight several factors related to breakup distress and the relationships between the Breakup Distress Scale and other well-known measures of depression (CES-D) and anxiety (STAI). The high incidence of breakups in university students and their breakup distress suggest the importance of finding effective therapies for this problem. The similarity of breakup distress to complicated grief syndrome further suggests the need for considering breakup distress as a DSM-V diagnosis.

It should be noted that these results might not generalize to other university student populations inasmuch as the majority of students in this sample were Hispanic women (78%). Further research is needed to investigate these problems in this predominantly Hispanic female psychology student population. In particular, exploring cultural differences in breakup distress among participants of Latin/Hispanic origin would be important in light of the research findings showing different love attitudes and patterns of Cuban-Americans, Mexicans, and Spaniards (Rodriguez, Montgomery, Palaez, & Salas, 2003). Rodriguez et al., (2003) found that in a Hispanic sample in Miami, on average, breakups were more frequent among Mexican and Spanish students who tended to be more pragmatic in their approach to relationships. That group has already been identified as having more breakups (Rodriguez et al., 2003), highlighting the special need for intervention for this group of university students.

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