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Romantic breakup distress in university students: A narrative review

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ABSTRACT

This narrative review of literature on romantic breakup distress and recovery includes studies on the effects of this distress, risk and protective factors for breakup distress and interventions. The effects include sadness, anger and broken heart syndrome. The risk factors for breakup distress include being the “dumpee” versus the “dumper”, internet surveillance of the “dumper”, having been in a spiritual relationship, intrusive thoughts, an orientation towards future relationships or a fear of being single, having the relationship as part of your identity or your self-worth and experiencing social constraints like criticism. Protective factors include having been more committed to the relationship and then continuing to experience closeness in that relationship but also having a rebound relationship. Effective interventions include a writing task describing the breakup, online group discussions of the breakup and tryptophan for its serotonin-enhancing properties. Limitations of this literature include lack of generalizability from the mostly female university student samples and potentially biased self-report data.

Keywords: Romantic breakup distress, university students

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Romantic breakups occur in as many as two-thirds of university student samples and they frequently lead to breakup distress, depression, anxiety and stress (Field, 2017). In 2015 a U.S. university counselling center reported an increase of 131% in yearly visits and 173% in total yearly visits (Beiter, Nash, McCrady, Rhoades & Linscomb, 2015). This narrative review involved a search of the literature from the last 10 years on PubMed and PsycINFO for the terms romantic breakup distress and heartbreak. For the selection process, exclusion criteria included non-English papers, case studies, under-powered samples, and non-juried papers. Following these screening criteria, those selected papers are briefly reviewed here. Only statistically significant results are given.

This review of recent literature on romantic breakup distress and recovery suggests that very little research is being conducted on this topic. In addition, although researchers are still studying the effects of romantic breakups, they are more often examining risk and protective factors for breakup distress. The salient effects of breakup distress continue to be sadness and anger as well as a broken heart syndrome.

The risk factors for breakup distress have included being the “dumpee” versus the “dumper”, internet surveillance of the “dumper”,

having been in a spiritual relationship, intrusive thoughts, an orientation towards future relationships or a fear of being single, having the relationship as part of your identity or your self-worth and experiencing social constraints like criticism. Protective factors include having been more committed to the relationship and then continuing to experience closeness in that relationship, having a rebound relationship and having greater insight. Predictors of slower recovery that have been studied in laboratory situations include the use of personal pronouns in writing about the breakup and showing more facial activity when thinking about the breakup. Interventions that have been serendipitous include experiencing less breakup distress when being in a classroom where relationships were more common and being in more research assessments, as if participating in research is an intervention in itself. Some designed interventions include writing about the breakup, online group discussions on the breakup, and the effects of tryptophan for its serotonin-enhancing properties. Accordingly, this review is divided into different sections that reflect the literature including effects of romantic breakups, risk factors for breakup distress, protective factors, interventions and limitations of the literature.

Table 1. Effects of breakup distress and first author.

Effect	First author
Sadness & anger	Sbarra
Sad facial expressions	Heshmati
Broken heart syndrome	Field, Potu, Roshanzamir, Lacey, Ghadri
Neural representations for breakup pain	Kross, Woo

Effects of Romantic Breakup Distress

Earlier research on breakup distress focused on the immediate effects of romantic breakups including depression, anger, broken heart

syndrome and immune dysfunction (see Field 2011 for a review). In one of the earliest studies on breakup distress, for example, the high breakup distress group had higher scores on

negative emotions scales including depression, anxiety and anger and on negative behaviors including poor academic performance (Field, Diego, Pelaez, Deeds, & Delgado, 2010). Fewer studies were found on immediate effects in the recent literature, although researchers continue to focus on depression, anger and the broken heart syndrome. And, in the recent literature, research appeared on mood states including sadness and anger, facial expressions that reflect those states and continuing research on the broken heart syndrome (see table 1 for a list of these effects and first authors).

Mood States

In a breakup effects study on mood states, young adults completed a daily diary for one month describing their feelings about romantic breakups (Sbarra & Ferrer, 2006). A dynamic factor analysis revealed that love/longing, sadness and anger were separate but correlated mood states. Moderate correlations were noted between the love and sadness factors, suggesting emotional co-occurrence. To a lesser degree, sadness and anger were comorbid. This was expressed as sadness for the loss of the relationship and anger attributed to the partner who initiated the breakup. In their sequential analysis, sadness typically preceded anger. This was particularly true for the good adjustment versus the poor adjustment groups. While the good adjustment group was experiencing sadness and anger, the poor adjustment group was experiencing sadness without anger, suggesting that anger may help sever the attachment.

Facial Expressions

Most of the research on breakup effects has been based on self-report (Field, 2011). Facial expressions have also been recorded and they would be expected to be consistent with the negative emotions that have been self-reported. So, for example, photos of sadness would be reflected in an upturned mouth and furrowed brow and a fearful face would feature widened eyes and an open mouth. Some have argued that recording of behaviors such as facial

expressions may be a less biased and more objective measure of spontaneous emotions than self-report (Heshmati, Sbarra, & Mason, 2017). In this study, computer expression recognition software was used to record the facial expressions (sadness, fear, anger, contempt) of 135 recently separated university students while they responded to interview questions about their thoughts and feelings regarding their breakups. The authors expected that anger and contempt would serve as distancing emotions and therefore would be associated with less breakup distress than sadness and fear which might sustain a longing for the relationship and thus lead to greater breakup distress. Surprisingly, they found that anger, sadness and fear were not predictors of distress. Instead, contempt was associated with less distress initially but with greater distress over the long-term. The authors interpreted contempt as being an adaptive form of rejection of the other person but suggested that the continued feelings of contempt could be a marker of poor adjustment.

Some limitations of this study include: 1) only the first minute of the breakup interview was analyzed; 2) the study included three times as many women as men and university students experiencing non-marital breakups which may not be generalizable to older adults or those in divorces; 3) the study lasted only two months so the results did not reflect long-term outcomes; and 4) the study did not include self-report measures, so relationships between the facial expressions and self-reported feelings could not be determined.

Broken Heart Syndrome

Broken heart syndrome has received increasing attention across the last several years and has been extensively reviewed (Potu, Raizada, Gedela, & Stys, 2016; Roshanzamir & Showkathali, 2013). This syndrome is characterized by left ventricular dysfunction and accompanied by chest pain and T wave inversion and is typically associated with emotional stress following loss or breakup

distress (Potu et al, 2016). Although broken heart syndrome mimics heart attack symptoms, it does not usually result in permanent damage and is asymptomatic within a few weeks. Elevated catecholamines and a hyperactive sympathetic nervous system response are thought to be underlying mechanisms. This syndrome is typically verified by angiogram, ventriculogram, echocardiogram or cardiac MRIs that differentiate the broken heart syndrome from a heart attack (Roshanzamir & Showkathali, 2013).

In an effort to identify psychological risk factors for broken heart syndrome, ten different psychiatric conditions were assessed in a sample of people who experienced this syndrome versus a group of healthy volunteers (Lacey, Mulder, Bridgman, Kimber, Zarifeh, Kennedy, et al, 2014). Although “neuroticism” differentiated the two groups, there was no association between broken heart syndrome and previous psychiatric illness. Another research group compared international registry broken heart syndrome patients who had an “emotional trigger” including either a happy or a sad event (Ghadri, Sarcon, Diekmann, Bataiosu, Cammann, Jurisic, et al, 2016). Of those who had an emotional trigger, 4% had experienced a happy event and 96% a sad event. The clinical symptoms, for example, chest pain, and the laboratory findings were similar for both groups, although midventricular involvement was more prevalent in the “happy heart syndrome” patients than the “broken heart syndrome” patients who had more left ventricular involvement.

That these two syndromes share common pathways is not surprising inasmuch as fMRI studies have revealed similar activity in the same areas of the brain for both romantic love and romantic breakups, and similar dopamine and other catecholamine levels have also been noted in both love and breakup conditions (Field, 2016). The increased arousal levels and the accompanying increase in dopaminergic activity in similar parts of the brain may account for these similar profiles.

Neural Representations for Breakup Pain

A network of different regions of the brain is activated by breakup pain. In a study on unwanted breakups, the participants viewed a photograph of their ex – partner as they thought about being rejected (Kross, Berman, Mischel, Smith & Wager, 2011). Based on fMRI data, areas of the brain that respond to physical pain became active including the secondary somatosensory cortex and the dorsal posterior insula. The researchers concluded that unwanted breakup pain activates the same regions as are activated by physical pain.

Surprisingly, the same group of researchers reported different functional connectivity in a later study on a larger sample using the same paradigm (Woo, Koban, Kross, Lindquist, Banich, Ruzic et al., 2014). In this database, the neural representations for physical pain and breakup pain were not correlated and showed distinct functional connectivity with different regions of the brain including the dorsal anterior cingulate and the anterior insula. The authors suggested that the difference in their two data sets did not derive from the addition of 20 participants but rather the differences related to a more complex multivariate fMRI pattern that was sensitive and specific to rejection and that physical and breakup pain yielded distinct patterns even in the overlapping regions that were activated by both physical and breakup pain. One of the problems with the comparison is that the ex-partner photos related to a past experience while the physical pain was an acute thermal stimulus. And they also used a cross-sectional paradigm rather than a within-subjects longitudinal design.

Risk factors for breakup distress

Several risk factors for breakup distress have been studied. These include being “dumped”, internet surveillance by the “dumped” person, having been in a spiritual relationship, having intrusive thoughts, having a fear of being single, being oriented towards future relationships, having one’s identity and self-worth dependent on the relationship and experiencing social

constraints or criticism related to the breakup (see table 2 for a list of these risk factors and first authors).

Being “Dumped” or Rejected

Being dumped is a significant risk factor for breakup distress. In a narrative analysis study, six biographical interviews based on 24 past relationships yielded three categories of breakups including “dumpers”, “dumpees” and individuals who reported consensus about their breakups (Doering, 2010). The dumpers generally dismissed any conflict in the breakups, they used externalization strategies (i.e. shifting

the responsibility onto the former partner, social circumstances or personal characteristics beyond their conscious control), and described themselves as empathetic. Although the dumpees also used externalization strategies, they denied injury, emphasized their role in the breakup and described valuable changes that happened to them following the breakup. Those who reported having consensus denied that any harm had been done in the breakup. Gender differences included women claiming more responsibility and men blaming their partners more frequently.

Table 2. Risk factors for breakup distress and first author.

Risk factor	Author
Being “dumped”	Doerring, Barber, Perilloux, Bronfman, Yildirim
Being initiator	Carter, DeLecce
Internet surveillance	Carter, Gershon, Tong, Fox, Lukacs, Tran, LeFebvre, Haimson, Spielmann
Spirituality of relationship	Hawley
Intrusive thoughts	Pierce, Field, Tran, Abassi, DelPalacio-Gonzalez
Fear of being single	Spielmann, Gilbert, Field, Norona
Relationship contingent Self-worth	Boals, Park, Mason
Social constraints	Harvey, Arnett

In a study on university students, those who were dumped reported via an online diary method that they experienced greater distress and anger at one month following the breakup (Barber & Cooper, 2014). They also reported greater coping, self-affirmation, rebound and revenge motives for sex. Although the dumpees reported greater distress, they recovered more quickly than the dumpers. However, the

dumpees remained angrier across time. As the authors suggested, those who were dumped had more trouble letting go of the relationship, but being dumped was the best predictor of being on the rebound. This study, like several others, has questionable generalizability to other samples experiencing other types of breakups like divorce as well as being at different stages of life.

Dumpers and dumptees were called rejectors and rejectees in another university sample study (Perilloux & Buss, 2008). In this study, 56% were rejectors and 44% were rejectees. The rejectees reported more depression and rumination over the breakup and decreased self-esteem. They also reported feeling more angry, confused, shocked and jealous after the breakup. They experienced loss of concentration and concern about replacing ex-partners' resources and acquiring a new mate and perceived themselves as less desirable. The strategies they reported using included discussing the breakup, crying and pleading with the ex-partner, avoiding the ex-partner and threatening their ex-partner. Female rejectees reported feeling more sad, confused and scared. The rejectors, in contrast, reported greater guilt but also greater happiness, loss of shared friends, loss of sexual access and loss of ex-partners' resources. Their strategies included remaining friends with the ex-partner, boosting the ex-partner's self-esteem, drinking and using drugs, spending money to attract a new partner and showing affection to someone else in public.

In another study, female rejectees experienced more breakup distress but especially after being in a long relationship (Bronfman, Ladd-Luthringshauser & Sockol, 2016). This study, like many others, could have benefited from using other sources of data such as friends or the partners of the breakup students to establish some convergence of the data. This, of course, would be a more difficult form of sampling. The convenience sampling of university students is limited by age range and by experience, and it is likely that an older sample would have experienced even more adaptive problems.

In another study, initiator status was entered along with a few other variables into a regression analysis as predictor variables for adjustment to breakup (Yildirim & Demir, 2015). This convenience sample was taken from a large university in Turkey and comprised 140 women and 143 men who had experienced at least one breakup during the last year. In the regression

analysis, initiator status, existence of a new partner, certainty of the breakup reasons and social support were significant predictors of breakup adjustment. However, these factors combined only explained 18% of the variance, suggesting that several other unmeasured factors were contributing to breakup adjustment. Other limitations of the study included its being a cross-sectional survey based on one period of time. And, the data were, once again, collected from only one side of the breakup. Further, the data derived from the Turkish culture may not generalize to other cultures, although the results are very similar to those previously presented.

Being the initiator of the breakup has also been associated with positive outcomes and especially being a female initiator. In a recent study, being a female initiator was a key predictor of positive outcomes (Carter, Knox & Hall, 2018). In another study, being a female initiator was associated with greater happiness but also a longer recovery (DeLecce & Weisfeld, 2016). The longer recovery may relate to post-breakup behavior of these participants with as many as 40% continuing to text, 26% to communicate online and 20% to communicate by phone (De Lecce & Weisfeld, 2016).

Internet Surveillance

Although most of the breakup research is based on face-to-face breakups, one study compared in person breakups with online breakups (46% in person, 32% by text and 20% by phone) (Carter et al., 2018). Surprisingly, no differences were noted for the different types of breakup distress. Nonetheless, while some have suggested that texting is an appropriate breakup method, many consider it inappropriate (Gershon, 2011).

Online surveillance of the initiator may contribute to greater distress. Post – breakup surveillance has been reported by a few research groups. In one study that featured Facebook breakups, surveillance of the breakup initiator led to greater distress (Tom-Tong, 2013). Similarly, in another study, internet surveillance led to greater breakup distress for the person who was dumped (Lukacs & Quan-

Haase, 2015). Reciprocally, greater distress has also led to partner monitoring immediately after the breakup, especially by those who did not initiate the breakup (Fox & Tokunaga, 2015). Thus, break-up distress and online surveillance appear to be bi-directional. And, those who ruminate while examining the ex's profile appear to have even greater distress (Tran & Joormann, 2015). Some have suggested that profile access should be limited in order to manage breakup distress (LeFebvre, Blackburn & Brody, 2015), and Facebook has reputedly limited access since then (Haimson, Andalibi, DeChoudhury & Hayes, 2018). Given these data, it is surprising that pursuing sex with an ex-partner has not been associated with breakup distress or recovery (Spielmann, Joel & Impett, 2019). And, in this study, most sexual pursuits were successful and the success rate was not associated with breakup recovery.

Spirituality of the Relationship

A surprising risk factor for breakup distress is the spirituality of the relationship. In a study on 445 university students who had experienced a recent romantic breakup, 49% reported that they had experienced a sacred loss and/or desecration associated with their breakup (Hawley, Mahoney, Pargament, & Gordon, 2015). This was based on their responses to 28 items on a scale that taps sacred loss (e.g. "In this event, something central to my spirituality was lost") or desecration (e.g. "A sacred part of my life was violated"). In addition, the scores on this scale mediated the links between greater pre-breakup sexual activity and greater breakup distress. As many as 78% of the participants reported engaging in at least one of six sexual behaviors with their partner before the breakup. And both the lost spirituality and sexual activity were directly related to greater distress and anger over the breakup. The mediation model was especially strong for participants who reported moderate to high religious involvement. Several limitations of the study were highlighted by the authors including: 1) the fact that directionality or causality cannot be inferred from

the results of a cross-sectional, correlation study. For example, some of the students may have become more religious as a result of the breakup; 2) although the sample was large, it involved students from the Midwest, and 72% of them were female, suggesting it was not a representative sample; 3) the students were at different stages of the breakup after varying quality relationships of different durations; and 4) the self-report data came from individuals who had been in relatively short duration relationships rather than couples who had been in more committed, long-term relationships.

Intrusive Thoughts

Intrusive thoughts are distressing, compulsive thoughts that are recurrent and difficult to control (Peirce, 2007). These have seemed to derive from unrealistic beliefs, assumptions and expectations that have to be reconciled when something unexpected occurs like a romantic breakup. In a study on intrusive thoughts and breakup distress, a self-report measure called the Breakup Symptoms and Solutions Scale was created including subscales on intrusive thoughts, somatic symptoms, extracurricular activities and social support (Field, Diego, Pelaez, Deeds, & Delgado, 2013). This scale included intrusive thoughts items (having trouble getting the ex-partner out of your mind and having dreams about that person), somatic symptoms (sleep, appetite, hurt feelings and physical health problems), extracurricular activities (listening to favorite music, physical exercise) and social support items (being able to talk to friends, family and professionals about the breakup). The sample was comprised of 283 university students of which 66% had experienced a breakup within the last four months. The breakup sample was divided into high and low breakup distress groups based on a median split on the Breakup Distress Scale scores. In a stepwise regression analysis with the breakup distress scale scores as the dependent measure, the subscales of the Breakup Problems and Solutions Scale contributed to 38% of the variance including

intrusive thoughts scores (28% of the variance), somatic symptoms (8%) , and extracurricular activities (2%).

These results may not be generalizable given that 78% of the sample was comprised of Hispanic female university students. In addition, analyses were conducted to determine the convergent validity of five intrusive thoughts scales that were administered. However, despite the fact that the high and low breakup distress groups differed on each of the intrusive thoughts scales, those scales were not entered into a regression analysis to determine which of the scales contributed to the most variance on breakup distress.

In a seven-month longitudinal study, a higher frequency of relationship– dissolution and intrusive thoughts predicted breakup distress (Del Palacio-Gonzalez, Clark & O’Sullivan, 2017). This relationship, however, was confounded by greater brooding and less reflection. Others have referred to intrusive thoughts as rumination. For example, in a study on individual differences in rumination, rumination was associated with the tendency to experience maladaptive thoughts when looking at ex—partners’ profiles on Facebook (Tran & Joormann, 2015). In this study, high ruminators experienced greater breakup distress, and Facebook use mediated the relation between rumination and breakup distress. Facebook addiction has been related to romantic breakup distress in at least one other study (Abbasi, 2018).

Fear of Being Single and Future Relationship Orientation

Fear of being single (Spielmann, MacDonald, Joel, & Impett, 2016) and a future relationship orientation (Gilbert & Sifers, 2011) are related risk factors for romantic breakup distress. In the fear of being single research, two studies were conducted including a cross-sectional study on 209 adults (64% women) as well as a one-month daily experience study of 117 adults (44% women) who had just experienced a romantic breakup (Spielmann et al, 2016). Those who

experienced a stronger fear of being single reported a greater longing for their ex-partner irrespective of who initiated the breakup. Lagged-day analyses revealed that fear of being single increased longing and renewal attempts over time, but longing did not influence fear of being single.

Future relationship orientation was a related risk factor for breakup distress in an online survey of 1404 university students (Gilbert & Sifers, 2011). Those with a greater future relationship orientation reported greater distress after the breakup. Women also reported greater future orientation and greater breakup distress. These findings were based on the Future Time Orientation Scale that consists of Future Investment, Future Involvement and Future Communications subscales.

Fear of not finding another relationship would seemingly relate to fear of not finding intimacy again, inasmuch as losing intimacy was given as the primary reason for ending a relationship in at least two studies (Field, Diego, Pelaez, Deeds, & Delgado, 2010; Norona, Olmstead, & Welsh, 2017). In a study on university students (N=156, 112 females) who had recently experienced a breakup, high breakup distress versus low breakup distress groups (based on The Breakup Distress Scale) were compared on their reasons for breakup (Field et al, 2010). The Breakup Reasons Scale which was created for this study was comprised of intimacy, affiliation, sexuality and autonomy subscales. On this measure, only the intimacy subscale discriminated the high breakup distress from the low breakup distress groups (Likert scale items on poor communication, distrust, unreciprocated love, non-caring behavior, diminished empathy, arguments, infidelity and hypersensitivity) The groups also differed on the Relationship Scale (Likert scales on five items including a relationship rating, sharing activities/interests, sharing thoughts/feelings, affection and disagreements) and Missing the Partner Scale (Likert scales on three items including missing daily activities/rhythms, missing

talking/emotional closeness and missing touching/physical closeness).

Although the development of these three scales makes a significant contribution to the literature, and although the scales scores contributed to breakup distress, the relative importance of these qualities was not assessed, as in a regression model. The results were thought to have derived from the breakup but they may have also contributed to the breakup, as the data were collected retrospectively.

In another study, 113 young adults (47% women) who had initiated a breakup within the previous 6 months were recruited via Mturk on Amazon and asked to describe "what led up to the breakup" (Connelly & McIsaac, 2009). Their narratives given on Qualtrics were then coded for themes. The need for intimacy was given more frequently than the needs for affiliation and sexual reciprocity. Unfulfilled identity and autonomy were given as the second and third reasons for romantic breakup.

This study has some of the same limitations noted for the other studies including its being a cross-sectional study with a predominantly young and European-American sample. Further, the sample was self-selected which may mean the participants had already adjusted to the breakups, especially since they initiated the breakups. Even though inter-coder reliability was checked by a second researcher, the coding categories were selected by one researcher. And, although events leading up to the breakup were not included in the qualitative data analysis, this is a unique contribution to the literature for focusing on relationship problems that lead to breakups.

Event Centrality and Relationship Contingent Self-worth

Two other related risk factors for breakup distress are "event centrality" which refers to construing an event as part of your identity (Boals, 2014) and "relationship contingent self-worth" (Park, Sanchez, & Brynildsen, 2011). In the event centrality study, 312 university

students (68 males) completed online measures of depression, posttraumatic stress, centrality of events, insight, closure and couples' satisfaction (Boals 2014). Ratings of event centrality following a recent breakup were associated with depressive symptoms and posttraumatic stress disorder symptoms at time one. Event centrality predicted time two depressive symptoms.

Similar to the event centrality variable, relationship contingent self-worth is defined as the degree to which an individual bases self-worth on being in a romantic relationship (Park et al, 2011). In this study, relationship contingent self-worth was measured by four items: "When I have a significant other, my self-esteem increases", "I feel worthwhile when I have a significant other" "When I do not have a significant other, I feel badly about myself", "My self-esteem depends on whether or not I have a significant other". The results of this online study of 312 adults (245 women) revealed that those who based self-worth more strongly on being in a relationship reported greater emotional distress and obsessive pursuit of their ex-partners. Not unlike other studies, no causal direction of effects could be determined. The relationship contingent self-worth could have derived from the breakup experience rather than preceding it. The participants were also reporting retrospectively without a specific time frame for the breakup so that the duration of effects could vary widely.

In another study, self-worth has been labeled self-esteem, and their results suggested that failure to redefine the self contributed to breakup distress (Mason, Law, Bryan, Portley & Sbarra, 2012). Although self-reports are sometimes not correlated with physiological data, in this study, negative facial expressions (greater activity in the corrugator supercilia facial muscle) while thinking about an ex-partner predicted poor self-concept recovery.

Social Constraints

Social constraints have also been noted to exacerbate breakup distress (Harvey & Karpinski, 2016). In this study, 238 university

students completed the Breakup Distress Scale and the Social Constraints Scale. Social constraints included criticism, withdrawal or minimizing opportunities for interaction. Example questions were how often has a friend or family member; 1) changed the subject when you tried to discuss your breakup; 2) minimized your breakup problems; 3) trivialized your breakup problems; 4) told you not to worry so much about your breakup; and 5) gave you the idea that they didn't want to hear about your breakup. Some limitations of this study are its cross-sectional, correlation model, making inferences about causality impossible. Although it also lacks generalizability to other types of breakups, e.g. divorce, there may be similarities

between university student romantic relationships and marital relationships including the associated companionship, intimacy and commitment.

Buffers or Protective Factors for Breakup Distress

Surprisingly, very few studies were found in the recent literature on buffers or protective factors for breakup distress. These included pre-breakup commitment to the relationship, getting into a rebound relationship, and cognitive processing. In addition, in a multivariate study, a few personality traits were buffers including optimism, self-esteem and grit (see table 3 for a list of these buffers and first authors).

Table 3. Buffers for breakup distress and first author.

Buffer	First author
Pre-breakup commitment	Fox, Tan
Negative reappraisal	Langeslag
Rebound relationships	Brumbaugh, Carter
Insight about breakup	Boals, Marshall, Brumson, O'Sullivan

Pre-breakup Commitment

Although greater commitment to the breakup relationship has been reported to lead to greater breakup distress in at least one study (Fox et al, 2015), it has been a buffer in other studies. Greater pre-breakup commitment was noted, for example, to predict greater post-breakup closeness in a study on 143 young adults who were involved in romantic relationships on the first day of the study and experienced a romantic breakup by the last day of the study (Tan, Agnew, VanderDrift & Harvey, 2015). Those adults who reported greater romantic commitment to their partners also reported greater satisfaction and investment in that relationship. Investments that are resources tied to a relationship (e.g., self-disclosures and shared social networks) were more predictive of

commitment than satisfaction in this study. Although one might expect that partners remaining close might prolong their breakup distress, these authors used the Investment Model to support their data, namely that former romantic partners can maintain a friendship when they are able to provide resources that fulfill their needs.

The conclusions of this study are tentative in that the reasons for the breakup may have influenced the post-romantic relationship closeness. Breakup partners may have remained friends because both of them were in new romantic relationships or because the breakup was mutual or because friendship had been the important feature of the old romantic relationship. The couple may have also maintained closeness in the hope of getting back

together romantically. This study was also limited by its sampling young adults from a low socioeconomic background and from collecting data from only one of the partners in the relationship.

Negative Reappraisal

Negative reappraisal of the ex-partner is an effective strategy for down-regulating love feelings following a romantic breakup. In a laboratory study, participants who were upset about a romantic breakup were asked to use three regulation strategies including negative reappraisal of the ex-partner, reappraisal of love feelings and distraction (Langeslag & Sanchez, 2018). They were then asked to view pictures of their ex-partner during which EEG recordings were made. Negative reappraisal was an effective love down-regulation strategy and the EEG data showed decreased amplitude of the late positive potential which accompanies decreased attention. However, this finding was confounded because the negative reappraisal also made the participants feel more unpleasant and distraction made them feel more pleasant.

Rebound Relationships

Rebound relationships can also be protective. Although rebound relationships are traditionally considered a relationship that happens too soon after a breakup and being just a steppingstone to a more legitimate relationship, at least one research group found that rebound relationships are associated with greater resolution over the ex-partner (Brumbaugh & Fraley, 2015). Two studies were reported by these investigators. In the first study (a longitudinal study on relationships), 77 people (60 women) from a Midwestern university as well as a local community sample completed several assessments on pre-breakup variables including experiences in close relationships and the Investment Model Scale as well as scales on psychological adjustment, feelings about ex-partners, and new partners. At the time of the post-breakup follow-up, 23 of the participants (93% women) were involved in a new relationship (mean duration=4 months). The

salient findings of the study were that those in rebound relationships had less residual feeling for their ex-partners and less contact with their ex-partners. They also had more confidence in their “desirability” and higher levels of well-being, self-esteem and trust. Those who started a relationship more quickly also tended to compare their new partner to their ex-partner. Faster rebound even when controlled for secure attachment was associated with greater self-esteem and well-being, suggesting that psychological adjustment was not a cause but rather the consequence of the new relationship. And, none of the previous relationship variables, i.e. attachment, satisfaction and commitment, predicted the rebound relationships.

In a second study reported in the same publication, a cross-sectional design was used with a larger sample to validate the findings of the first study (Brumbaugh & Fraley, 2015). In this study, 236 participants from a northeastern university included partnered people who had broken up with their ex-partner an average of 29 months previously and single people who had broken up an average of 13 months previously. For this study, the partnered participants were compared with the single participants. Once again, the partnered individuals reported more confidence in their desirability, greater well-being, less anxiety and avoidance, greater trust of the new partner, less lingering feelings for their ex-partner and less contact with their ex-partner. These comparisons are confounded, however, by the breakup being twice removed in time in the partnered versus the single participants (29 vs. 13 months). Both studies featured more women and mostly college age individuals. This age group typically has shorter-term relationships and more rebounding and it's not clear whether the rebounds occurred after more casual or serious relationships. It is also unclear what factors led to the rebound relationships even though they appeared to have positive effects.

Another research group reported the recovery effects of a new relationship (Carter et al., 2018).

However, the buffering effects also included time since the previous relationship, remembering negative things about the ex-partner, being distracted by work and having peer support. How much each of these variables contributed to the variance in breakup distress was not clear in this study.

Insight About the Relationship Breakup

Insight about the relationship breakup may be one of the factors that leads to rebound relationships, as is suggested by a study measuring different forms of insight (Boals, Valentine, Beike, 2015). In this study, 188 university students (141 females) were asked to spend 20 minutes online describing their breakup and to complete the Perceived Insight Scale including 12 items such as “I have a deep understanding of this event” rated on a 9-point Likert scale. Clinicians also rated their descriptions, and a word count program was used to count the insight words in the participants’ descriptions. Several depression and posttraumatic stress self-report measures were also given. These measures and one on new relationship status were assessed during a follow-up session eight weeks later. Greater participant-rated insight predicted all 6 measures including lower levels of distress, depression and health symptoms and higher psychological closure, posttraumatic growth and life satisfaction. The clinician-rated and the word count insight measures had no predictive validity. Those participants who had higher insight scores about their previous romantic breakup were more likely to be involved with a new partner by the end of the study. As the authors suggested, insight about the previous relationship may have resulted in finding new

relationships, but becoming involved in a new relationship may have also affected the perceptions of insight on the previous relationships.

Some limitations include the large attrition rate which may have biased the new relationship results inasmuch as those who did not complete the time two assessments were more distressed and depressed at time one. The correlations between participant insight and the outcome measures may be spurious because both the insight and the outcome measures were self-reports completed by the same person. And, once again, the generalizability of the findings is limited by the exclusive university student sample. Nonetheless, the insight factor contributed to less distress and a faster transition to a new relationship, highlighting it as a protective or buffering factor.

Others have referred to cognitive processing of the breakup as a buffer for the stress (Marshall, Bejanyan & Ferenczi, 2013). But surprisingly greater initial breakup distress facilitated greater cognitive processing that, in turn, resulted in greater personal growth, suggesting that these may be bidirectional processes. “Relational schema change” refers to changing beliefs about relationships following breakups that can buffer breakup distress (Brunson, Overup & Acitelli, 2019).

Still others have referred to “grit” as a significant buffer for breakup distress, particularly the breakup-associated rumination and depression (O’Sullivan, Hughes, Talbot & Fuller, 2019). However, “grit” was characteristic of those participants who had greater self-esteem and were more optimistic which are confounding variables.

Table 4. Laboratory predictor variables and first author.

Predictor	First author
Personal pronouns in written narratives	Boals
Facial electromyography	Mason, Coifman

Laboratory Predictor Variables

Although the previously discussed risk and protective factors for breakup distress might be considered predictor variables, they are all based on self-report and self-ratings. Two simple predictor variables that have been assessed in laboratory situations include the use of personal pronouns in written narratives and facial activity in response to romantic breakups. These variables have been viewed as less subjective than self-reports by the researchers using them (see table 4 for a list of these predictor variables and first authors).

Personal Pronouns in Written Narratives

In the study on word use in emotional narratives about romantic breakups, 218 University students who had experienced breakups during the past year were invited to write a two-page narrative for 20 minutes on their previous relationship and the subsequent breakup (Boals & Klein, 2005). Word-use analysis was then used to count and categorize the words in the narrative including cognitive, causal, positive emotion, negative emotion, sensory words, first and second person singular and plural pronouns, past, present and future tense words. In addition, questionnaires were used to assess intrusive thoughts, avoidance and grief. Relationship measures included the duration of the relationship and the question of being involved in a new relationship. Although these two variables have been notably protective factors in studies already discussed, they were surprisingly not related to any of the variables in this study. Higher scores on the grief measure were associated with greater use of causal words, less use of past tense, greater use of present tense and greater use of first-person singular pronouns. Inasmuch as grief involves hurtful feelings and an inability to accept the loss, the greater use of causal words by those reporting the greatest grief was presumably related to the process of their searching for meaning and trying to understand this negative experience. Less past and more present tense words were noted in the more traumatic sections

of the breakup narratives. Other studies have also found elevated use of first-person singular pronouns in those experiencing psychological distress.

Although some would consider a word count analysis more objective, others have suggested it is more superficial than the more dynamic exploration of themes. Secondly, this study's correlational design limits any causality interpretations. And, like most of the heartbreak studies, it sampled only university students.

Facial Electromyography

In a multivariate study on recovery following a romantic breakup, both self-report and physiological measures were taken (Mason, Law, & Sbarra, 2012), even though some researchers have reported inconsistencies between physiological and self-report measures in bereaved individuals (Coifman, Bonanno, Ray, & Gross, 2007). Seventy university students (22 men) who had experienced breakups during the past six months were invited to attend a series of eight 30-minute laboratory visits over a period of two months. During the first visit, facial electromyography (EMG) data were collected from the muscle above the brow while the participants were asked to reflect on answers to seven breakup-related questions that were presented on a computer screen. Those questions included asking the participant to think about "the first meeting with the ex-partner", "whose idea was it to breakup", "what do you remember about the breakup", "how have you come to cope with the breakup" and "what was the worst part about the breakup". At the end of the question period, self-ratings were made on how emotionally difficult it was reflecting on the breakup questions.

The results revealed that greater activity in the brow facial muscle when thinking about the ex-partner predicted poor self-concept recovery and suggested a negative association between love for an ex-partner and self-concept recovery. The participants who reported poor self-concept recovery at any given week tended to report poor psychological well-being the next week instead

of the reverse. This suggests that changes in self-concept may be one mechanism that contributes to post breakup distress and suggests why some recover better than others following romantic breakups. These data are consistent with other data from the same laboratory showing that continued contact with the ex-partner was associated with poor psychological outcomes (Sbarra & Emory, 2005). The greater brow muscle activity suggested negative emotionality that the participants were unable or unwilling to report. These data are consistent with other data showing inconsistencies between self-report and physiological measures (Coifman, Bonnano, Ray & Gross 2007).

Some methodological limitations of this study include the significant attrition over the course of the two months which is consistent with other longitudinal breakup studies. Also, the relationships had ended approximately four months before the study began, suggesting that some of the self-concept recovery may have already occurred before the study began. Finally, the typical generalizability problems also

occurred here not only for the study being confined to a university sample but also because the sample was limited in terms of age range and the average duration of the relationship. The effects could have also been related to geographical separations of the college students rather than the breakup distress itself.

Incidental and Planned Interventions

The few intervention studies that could be found in the literature on breakups could be classified as incidental or planned interventions. One incidental intervention was being in a classroom where relationship breakups were common. Another incidental intervention was participating in more research assessments and experiencing less distress, as if being in research was an intervention in itself. The planned interventions have included engaging in a narrative writing task about the breakup distress, online group interactions by individuals who have experienced breakup distress and receiving tryptophan treatment to facilitate serotonergic activity (see table 5 for a list of these interventions and first authors).

Table 5. Incidental and planned interventions and first author.

Interventions	Author
Classroom context	Hou
Participating in research	Longwell, Larson, Mason
Writing narratives about breakup	Smyth, Diemer
Asynchronous internet group support	McKiernan
Tryptophan	Emanuele

Classroom Context

The moderating effect of classroom context on romantic breakups has been studied with adolescents in China (Hou, Natsuaki, Zhang, Guo, Huang, Wang, et al, 2013). The authors' thesis was that classrooms that have many peers who are experiencing romantic breakups would provide greater opportunity for empathy

and support from their classmates who had experienced similar breakups. Data were collected from 47 schools containing 106 classes that were serving 4,776 Chinese adolescents in 9 different cities. Questionnaires were given on the romantic relationship breakup, depressive symptoms on the Center for Epidemiological studies–Depression Scale, delinquent behaviors on the Youth Self-Report

Inventory and on the classroom romantic context which was based on the students' perceptions of the percentage of classmates who had romantic relationships. Non-dating adolescents had the lowest level of depressive symptoms and delinquent behaviors. Adolescents who had experienced breakups but had not started new romantic relationships in the past year had more depressive symptoms than adolescents who had experienced both romantic involvement and breakups in the past year. And the breakup only group had the highest level of depressive symptoms and delinquent behaviors. As the adolescents entered higher grades, breakup effects were less negative including less depression and delinquent behavior. And the primary result was that the association between breakups and depressive symptoms was weaker in classrooms with a greater prevalence of adolescent romantic relationships.

These data come from adolescents from China where the incidence of romantic relationships in adolescence is lower than the incidence in the U.S. (16% males, 12% females as opposed to 53% males and 67% females in the US) (Hou et al 2013). Nonetheless, they are consistent with data from the U.S., suggesting that adolescent romantic relationships are associated with adjustment problems. However, the variances explained by the classroom romantic contexts were relatively low, suggesting that other variables such as teachers' support need further examination. In addition, only the negative effects of adolescent breakups were examined in this study, although positive effects would also be expected, as in posttraumatic growth. The incidence of posttraumatic growth, for example, has ranged from approximately 30 to 80% (Linley & Joseph, 2004). Third, this study had some typical limitations including that the data were cross-sectional and based on self-reports. And, the romantic involvement and breakups were assessed using a one-item measure. Nonetheless, these findings on classroom context are unique, and the data on breakup effects on Chinese adolescents are also unique

for a literature that predominantly derives from Western countries.

Participating in Research

Participating in research has been noted to have positive effects. For example, in one study on repeated assessments of depression, anxiety and negative mood, a no-treatment group had low scores on these measures (Longwell & Truax, 2005). Participating in a similarly intensive assessment may reduce breakup distress, as was noted in another study (Larson & Sbarra, 2015). In this measurement-intensive study, recently separated young adults were assigned to a group that received four assessments over a nine-week period (N=120) or a group that received only intake and exit assessments (N=90). The participants in the intensive assessment condition completed self-report measures on breakup intrusion, avoidance, loneliness and self-concept disturbance. They also participated in a four-minute stream of consciousness speaking exercise on their breakup thoughts and feelings, a color-naming and a serial subtraction math task. Shorter versions of these measures were repeated in the follow-up visits. In contrast, the pre-post condition group only completed the self-report measures which meant that their participation was 45 minutes versus the 3.5 hours for the intensive assessment group. The findings suggested greater improvement in self-concept by the intensive assessment group, and that improvement in self-concept mediated decreases in self-reported loneliness and intrusion. As the authors suggested, the intensive assessments may have increased self-monitoring and the sense of self and those, in turn, improved psychological well-being, as happened in a study already discussed above (Mason et al, 2011).

Several confounds can be noted in this study including that the intensive assessment group not only met for twice as many assessments but also engaged in more extensive assessments including the stream of consciousness measure and autonomic monitoring. The samples also

differed in size and in attrition rates with the intensive assessment group having a greater attrition rate. And, again, these results may not be generalizable as they were limited to a predominantly female sample of non-marital breakups.

Writing Narratives About the Breakup

Writing has been frequently used as a therapeutic technique (Smyth & Pennebaker, 2008). Although romantic breakups are the most common reason given for university students seeking counseling, relatively little research has been conducted on writing therapy for university student breakups (Diemer, Wang & Dunkle, 2009). In this study, two types of writing tasks were explored including a general prompt with the direction “please write about your romantic break up experience” (100 words minimum) or a loss/gain prompt with the direction “please write about some of the gains and losses that you associate with your romantic breakup” (100 words minimum). The sample included 15 men and 26 women who were recruited from a mid-western university. The time since breakup averaged six months, 37% had initiated the breakup, 24% were mutual initiations, 27% had not initiated the breakup and 90% were not yet in another romantic relationship.

The general prompt group narratives were longer and featured more emotional responses that were descriptive of the breakup experience. The loss/gain prompt responses were more reflective and cognitive and contained more meaning-making statements. Students who were not initiators of the breakup expressed significant pain, surprise and even a sense of “being ambushed” by the breakup. In contrast, students who were initiators of the breakup gave the partner’s neediness or clingy nature as a primary factor in ending the relationship. Although the quantitative literature has been mixed on whether males or females are more affected by breakups, this qualitative study revealed no gender differences. The authors suggested that these two types of writing task be used together inasmuch as students might

initially benefit from recalling the experience in an open-ended writing task, while they might be encouraged to cognitively reflect on the breakup with the loss/gain writing task.

This study has the usual problems associated with qualitative designs as well as being cross-sectional with limited causation implications. Although random assignment was used, the groups may have differed on some variables that were not measured. Inasmuch as the breakups were not that recent, the retrospective recall may not be representative of the actual experience. And the sample was not only biased in its being primarily female but also could have self-selected for students who are more open to writing a narrative about their experience. Thus, the generalizability of the findings is not clear. This is also not a clinical sample which may have reported more pain and difficulty with the breakup experience. Future studies might combine the two writing tasks and assess the therapeutic effects of the writing experience

Asynchronous Internet Group Support

The Internet has also been used as a vehicle for expressing breakup distress. In an Irish study, 31 users (16-25-years-old) and 10 moderators had asynchronous discussions (i.e. messages exchanged over time rather than simultaneously) over a period of one year (McKiernan, Ryan, McMahon & Butler, 2017). An asynchronous rather than a synchronous forum was selected because it was considered a more anonymous, nonthreatening environment for discussion. A coding system was developed based on the types of interactions that took place on the forum. Content analysis was then conducted on the qualitative data. Personal expressions including personal experiences and opinions were seen in 73% of the forum messages. Examples of these were an experience (“it was the most painful thing ever”, “it feels like she ripped my heart out and danced on it”) and opinions (“the reality is that people breakup with other people for a whole array of different complex reasons”). The next most common interaction (35% of interactions) was a

nondirective query inquiring about the experience or opinions of others (“all things considered, do you think the breakup was a good thing as it let you meet your new girlfriend”). A supportive expression was noted in around 29% of interactions (“everyone deserves to be in a relationship that is mutually fulfilling”).

Although this study was not intended to be an intervention study, but rather a data collection study, the nature of the interactions represented here suggests that this likely served as a cost-effective intervention for its participants. Further, as a qualitative study, it met the criteria for trustworthiness of qualitative data including credibility, dependability, and transferability. Unfortunately, no qualitative or quantitative outcome data were collected in this study, making it difficult to determine its intervention effects.

Tryptophan

A more direct intervention study involved giving tryptophan (a natural precursor of serotonin) for a period of six weeks to 15 healthy participants (11 females) who had experienced a recent romantic breakup (Emauele, Bertona, Minoretti, & Gheraldi, 2010). The participants were observed for romantic stress as measured by a questionnaire, and brain-derived neurotrophic factor (BDNF) as well as platelet serotonin were assayed at baseline, three and six weeks. Significant improvements were noted in romantic stress scores at three weeks, and a significant increase was noted in both BDNF and serotonin levels at six weeks. This study suggests a direct modulation of the serotonergic system that could be used in treating individuals with romantic breakup distress. Unfortunately, the physiological measures were not accompanied by other objective measures of breakup distress such as behavioral observations as opposed to the questionnaire that was used to tap subjective stress levels.

Limitations of these studies

This literature has many limitations starting with there being very few studies on romantic heartbreak and, as a result, reviews are rare and no meta-analyses could be found. Given that this is the primary presenting problem at university counselling centers,, it is not clear why there is a dearth of this research. The problem may relate to the absence of funding for research on romantic breakups.

Of the published studies, there are multiple limitations. They start with limited generalizability of the samples including that almost all of them are young, university female samples. They are not only limited demographically that way but they do not represent other types of heartbreak like divorce and different stages of life. The university student relationships are typically shorter, on-and-off, rebounding relationships. And, their breakups are often confounded by geographical separations of the students.

The quality and duration of the relationships are rarely quantified but would certainly be highly variable as well as confounding factors in both the breakup and the breakup distress. Further, the type of relationship, be it casual, serious, committed and/or cohabiting would be contributing factors for breakup distress. In addition, the reasons for breakup have not been factored into the breakup distress databases. Reasons for breakup have varied from relationship dissatisfaction in women in one study on relationship dissolution (Rosand, Slinning, Roysamb, & Tambs, 2014) to emotional or sexual extradyadic behaviors in another sample (Negash, Cui, Fincham, & Pasley, 2014). And, in the latter study, those behaviors occurred more often in high quality relationships, suggesting that high quality relationships have more to lose by the breakup and would certainly contribute to the breakup distress.

The outcome measures have been typically taken after a short period of time following the breakup although not immediately after. So “recovery” may have already occurred. And, the

assessments are typically one time-point measures. The rare longitudinal studies have been limited by large attrition rates. The measures are most often self-reports which have many limitations including their being retrospective recall data. Results can also be spurious because both the predictor and the outcome self-reports are made by the same person. Further, the data are from one partner of the relationship. In addition, primarily negative effects have been reported, although some positive effects might be expected, for example, the posttraumatic growth that has been previously reported (Herbert & Popadiuk, 2008). Even when multiple measures have been taken, the regression models suggest that low variance has been explained, suggesting the need to explore additional variables.

Future studies are needed on larger samples that are assessed by multiple variables, not just self-report measures. These could include behavioral, physiological and biochemical measures. Multivariate analysis models such as regression and structural equations analyses could then be used to determine the relative variance in breakup distress that is explained by the predictor variables. Further, longitudinal studies that begin with interactions within the relationships prior to the breakups may reveal qualities about the relationships that are then missing, for example intimacy, after the breakup occurs and the breakup distress happens. Repeated assessments would enable causal inferences regarding direction of effects rather than assuming them from correlation data as was done in this review. Nonetheless, the literature reviewed here highlights the significance of breakup distress and the importance of continuing research to reduce breakup distress.

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