UNDERSTANDING GENDER DIFFERENCES IN CO-RUMINATION AND CONFIDANT CHOICE IN YOUNG ADULTS

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Expanding rumination to an interpersonal context, the construct of co-rumination has garnered interest as an additional factor that explains gender differences in depression. To date, co-rumination has been primarily examined in adolescent and preadolescent samples and within the context of same-sex friendships. This approach may not effectively capture co-rumination in young adults, who have more diverse social networks than adolescents. As an extension of co-rumination research, we not only asked college students (N = 283, 168 females) to report on levels of co-rumination with a same-sex best friend but also on levels of co-rumination with their self-identified closest confidant. We administered the two corumination questionnaires at separate times along with the BDI-II. The results indicated that compared to men, women were less likely to choose cross-sex friends as their closest confidants. College men reported higher levels of co-rumination with female friends. Women tended to co-ruminate at the same levels regardless of their relationship to their primary confidant. These results have important implications for measuring co-rumination in young adults and indicate that, for men, co-ruminating varies according to their relationship to their primary confidant.

Beginning in mid-adolescence and remaining stable over the lifetime, the rate for depression onset is two times higher for females compared to males (Hankin et al., 1998; Hyde, Mezulis, & Abramson, 2008). Research on psychological factors that explain this gender difference in depression has found support for females'

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greater tendency to ruminate and greater interpersonal orientation explaining gender differences in rates of depression (Nolen-Hoeksema, 2008; Nolen-Hoeksema & Hilt, 2009). Rose (2002) integrated these two risk factors for depression by examining a new construct "co-rumination"—the rehashing of negative events within a dyadic relationship in a non-solution oriented fashion, focusing on event details and negative feelings associated with the event. Rose (2002) found gender differences in co-rumination in adolescence with girls reporting greater co-rumination than boys and co-rumination predicting greater depressive symptoms in girls but not boys. Corumination's association with depressive symptoms has been demonstrated both cross-sectionally (Starr & Davila, 2009) and prospectively (Hankin, Stone, & Wright, 2010) in adolescent samples. To date, the majority of the research on co-rumination has focused on adolescent samples (for an exception, see Calmes & Roberts, 2008) and on same-sex best friendships in particular.

As a social extension of rumination, co-rumination is likely influenced to some degree by the developmental changes that are a part of the transition from adolescence to young adulthood. The social landscape of young adults is typically very different in part because of the major changes that take place during this stage (i.e., attending university, attaining entry level work, gaining increasing independence from family members, and forming lasting adult roles). The transition from adolescence to young adulthood provides its own unique set of challenges and opportunities (Arnett, 2007; Cohen, Kasen, Chen, Hartmark, & Gordon, 2003). Erikson (1968) noted that in industrialized societies, young adults have a longer period of time for social exploration and identity formation. This period of transition and exploration is also associated with changes in young adults' social networks and the relative importance of certain relationships (Barry, Madsen, Nelson, Carroll, & Badger, 2009; Furman & Buhrmester, 1992; Monsour, 2002). The primary goal of the present study was to offer a way to effectively capture co-rumination in young adults, taking into consideration that young adults typically have different social networks than adolescents.

According to work done by Furman and Buhrmester (1992), as individuals age they rate more relationships as being relatively important, which may be evidence of a more diverse social network. According to their cross-sectional study, 4th graders saw parents as the most frequent providers of support, 7th graders described same-sex friends and parents as the most frequent providers of sup-

port, 10th graders saw same-sex friends as their primary source of support, and college-aged individuals ranked romantic partners, friends, and mothers as their most supportive relationships (Furman & Buhrmester, 1992). The fact that the relative importance of relationships varies over the course of development suggests that young adults and adolescents likely differ in whom they confide in and discuss their problems with the most. As such, a developmentally sensitive approach would suggest altering the measurement of co-rumination based on the age of the population being examined. For example, inquiring about same-sex best friendships is likely to provide an accurate gauge of co-rumination behaviors in adolescents given their general preference for same-sex friends (Furman & Buhrmester, 1992). However, young adults tend to have more gender diverse groups of friends (Baumgarte & Webster-Nelson, 2009) and are more willing to engage in self-disclosure with cross-sex friends (Connolly, Craig, Goldberg, & Pepler, 1999; Monsour, 1997, 2002). Hence, extending co-rumination research to a young adult population will likely require a more nuanced examination of corumination within the context of relationships other than same-sex best friends.

Using a college sample, Calmes and Roberts (2008) made the first inroads to understanding the nature of co-rumination within the context of a wider range of relationships. They simultaneously queried about students' co-rumination behaviors with their same-sex best friend, parents, romantic partner, and roommate. Calmes and Roberts found that only co-rumination with same-sex best friends mediated the relationship between gender and depression scores. The findings suggest that co-rumination with a same-sex best friend appears to be the key type of co-rumination associated with depression scores. That said, the findings are preliminary and further replication and extension are needed to better understand co-rumination processes in young adults. For example, Calmes and Roberts did not directly assess cross-sex friendships or split the parent grouping into mothers and fathers. As such, interactions between the gender of participants and the gender of confidants could not be fully examined in their study. Waller and Rose (2010) built on this work by examining co-rumination between adolescents and mothers in 5th, 8th, and 11th graders. They found that adolescent girls had higher co-rumination scores than boys, and girls who had higher co-rumination scores with their mothers reported more internalizing problems. However, the relationship with internalizing problems was

only consistently found when the focus of the co-rumination was the mother's problems. While these two studies extended the corumination literature into other relationships, psychologists have yet to directly assess co-rumination with a primary confidant, as chosen by respondents.

Given that primary sources of social support change over one's development and that the relationship between co-rumination and psychological distress may vary depending on the confidant, the current study sought to examine gender differences between confidant choice, reported co-rumination, and depressive symptoms in a sample of young adults. To this end, we developed a modified co-rumination questionnaire that asked participants to first indicate their relationship with their closest confidant and then report on their co-ruminating behaviors with that individual. The first objective of this study was to assess whom young adults identify as their primary confidant and whether there are gender differences in confidant choice. Some research indicates that both males and females find their female friends more supportive and will disclose more information to their female friends than to male friends (Baumgarte & Webster-Nelson, 2009; Dolgin & Kim, 1994). Therefore, same-sex and cross-sex friendships were examined specifically with the expectation that men would choose cross-sex friends as primary confidants at a higher rate than women. Other conceptually related relationships were also explored for gender differences in selection rates as confidants (e.g., mothers vs. fathers, friends vs. parents, etc.).

The second objective of the present study was to determine whether the relationship between gender and co-rumination would be moderated by the participant's confidant choice. Previous research suggests that females co-ruminate more than males in same-sex friendships (e.g., Rose, 2002). However, confining corumination to same-sex friends may ultimately underestimate corumination in males, specifically for those who confide in female best friends. In an early study that combined qualitative and questionnaire data, Komarovsky (1974) found that young men (college seniors) disclosed more intimate information to female friends than male friends. Subsequent studies have supported the notion that males disclose more intimate and personal information to their female friends (Consedine, Sabag-Cohen, & Krivosheka, 2007; Dolgin, Meyer, & Schwartz, 1991). Females appear to have the opposite disclosure pattern. When male and female friendships are assessed for closeness and intimacy, females consistently prefer disclosing intimate information to same-sex friends (Baumgarte & Webster-Nelson, 2009; Dolgin & Kim, 1994; Dolgin et al., 1991). Based on these disclosure preferences, male scores may be underestimated and female scores may be overestimated when confining the measurement of co-rumination to same-sex friendships. Nevertheless, co-rumination is not simply self-disclosure, so an empirical test is required to examine whether there are gender differences in co-rumination levels. We hypothesized that gender differences in co-rumination scores would be reduced or eliminated altogether when using a modified co-rumination questionnaire that allowed participants to report on their levels of co-rumination with their closest confidant (as opposed to same-sex best friend only).

The third objective of the present study was exploratory. We hoped to answer the question: which version of the questionnaire is more strongly associated with current depressive symptoms? The research literature suggests that co-rumination with a same-sex best friend in adolescence is associated with depressive symptoms (e.g., Rose, 2002). We hoped to extend the findings to primary confidants. While we expected that both versions of the co-rumination questionnaire would be associated with depressive symptoms, we also examined whether one version of the questionnaire was more strongly related to concurrent depression symptoms.

METHOD

PARTICIPANTS

The present analyses were conducted with 283 college-aged participants (168 females, 115 males). Participants' ages ranged from 18 to 25 years old (M=19.49, SD=1.22). In terms of class year, 26% were freshmen, 38% were sophomores, 16% were juniors, 19% were seniors, and 1% was classified as other. The sample was predominantly White (90%) and also included Hispanic/Latinos (5%), Blacks/African Americans (3%), Asian/Asian Americans (2%), and Native Americans (< 1%). Participants were primarily from middle- and upper-class families with only 20% reporting a family household income below \$50,000. The sample was drawn from a mid-sized, private university on the east coast. All participants received partial course credit for their participation in the study. The study was conducted with the approval of the university's Institutional Re-

view Board and met the ethical requirements for human participant studies.

MEASURES

Co-Rumination. Two versions of the Co-Rumination Questionnaire were used to assess participants' trait tendencies to co-ruminate in response to stress—the original Co-Rumination Questionnaire developed by Rose (2002) querying about same-sex best friendships and a modified version which asked participants to report their co-rumination behaviors with their closest confidant.

The original Co-Rumination Questionnaire instructs participants to respond based on their typical behaviors with their same-sex best friend or closest same-sex friends (Rose, 2002). The measure consists of 27 items, with 3 items assessing each of nine content areas: (1) frequency of problem discussion, (2) tendency to talk about problems rather than doing other activities, (3) how much the respondent encourages her friends to discuss problems, (4) how much the respondent's friends encourage him to discuss problems, (5) tendency to repeatedly revisit the same problems, (6) debate about potential causes of problems, (7) estimating the consequences of problems, (8) speculation about aspects of the problem that are not understood, and (9) heightened focus on negative emotions. Each item is rated on a 5-point scale from 1 (not at all true) to 5 (really true). The mean score of all 27 items is taken to compute an overall co-rumination score, with higher scores indicating a greater tendency to coruminate. The original co-rumination questionnaire demonstrated excellent internal consistency in this sample, Cronbach's $\alpha = .97$.

The original Co-Rumination Questionnaire was modified for the purposes of this study by including an additional question at the beginning of the questionnaire, which was "Who is your closest confidant (the person with whom you confide in the most)?" Participants were asked to identify their closest confidant from the options: best friend (same-sex), best friend (opposite sex), significant other, mother, father, roommate (if not best friend), and other. Participants were then asked to think about this person while answering the remaining 27 items. All other items were kept identical to the original Co-Rumination Questionnaire. The modified co-rumination questionnaire also demonstrated excellent internal consistency in this sample, Cronbach's $\alpha = .95$. For men and women who also selected

same-sex best friend using the modified co-rumination questionnaire, test-retest reliability between to the two co-rumination questionnaires was high, r(115) = .78, p < .001.

Depression. The Beck Depression Inventory–II (BDI-II; Beck, Steer, & Brown, 1996) was used to measure depressive symptoms. The BDI-II was created to better reflect the *DSM-IV* criteria for depression and has been shown to have good convergent validity with the BDI-I (Dozois, Dobson, & Ahnberg, 1998) and the Reynolds Adolescent Depression Scale (RADS; Krefetz, Steer, & Gulab, 2002). The BDI-II is a valid, reliable measure of depressed mood in both clinical and nonclinical populations as well as in a variety of social and cultural contexts (Alansari, 2005; Byrne, Stewart, Kennard, & Lee, 2007; Carmody, 2005). The BDI-II consists of 21 depressive symptoms that participants rated on a scale of 0 (*not present*) to 3 (*severe*). Scores can range from 0 to 63 with scores from 0 to 13 considered minimal depression, 14 to 19 considered mild depression, 20 to 28 considered moderate depression, and 29 to 63 considered severe depression (Beck et al., 1996).

Individuals taking the inventory were asked to think about how much they experienced each item over the past two weeks and select a corresponding score that reflected their experience of each symptom. The BDI-II was administered twice, once with the original co-rumination questionnaire and once with the modified questionnaire. In both instances, the BDI-II demonstrated good internal consistency in this sample, Cronbach's α = .83 and .89 respectively. Test-retest reliability for the BDI-II in this sample was acceptable, r(283) = .65, p < .001.

PROCEDURE

The two co-rumination questionnaires were administered at separate times and the depression measure was administered concurrently with each co-rumination questionnaire. Participants took the modified co-rumination questionnaire and the BDI at the start of the academic semester as part of a general pretest. The original co-rumination questionnaire and the BDI were administered within 4 to 8 weeks of the pretest. All measures were administered through internet-based surveys, which participants completed outside the laboratory in a location and at a time of their choosing.

RESULTS

CONFIDANT CHOICE

Initial descriptive analyses suggest that young adults are diverse in their choice of closest confidant (see Table 1). It is worth noting that same-sex best friends (40% overall) were most frequently selected as primary confidants. However, cross-sex friends (15% overall), significant others (22% overall), and mothers (13% overall) each appear to be consistent confidant choices in this sample. Men and women differed significantly in their confidant choices, $\chi^2(6, 283) =$ 21.86, p = .001. Roommates (n = 7), fathers (n = 9), and others (n = 7)11), were not consistently selected as confidents in this sample, and due to the small cell sizes, these categories were dropped from the remaining analyses. Looking at a subsample of peers that included only friends and romantic partners as confidant choices, men and women again differed in their confidant choices, $\chi^2(2, 219) = 14.32$, p = .001. Women chose same-sex friends as confidants at a higher rate (55%) than men (48%). Men chose cross-sex friends as confidants at a higher rate (32%) than women (12%). Lastly, women chose romantic partners as confidants at a higher rate (33%) than men (20%).

DIFFERENCES IN CO-RUMINATION

On Levels of Co-Rumination. Two independent samples t-tests were conducted to examine gender differences in average co-rumination scores using the original version and the modified version of the questionnaire. For the original co-rumination questionnaire in which participants responded based on their same-sex best friendship, there was a significant difference between women and men, t(281) = 4.88, p < .001, d = .59. Women (M = 2.65, SD = .79) reported higher average co-rumination scores than men (M = 2.17, SD = .85). In contrast, when using the modified version of the co-rumination questionnaire, men (M = 2.60, SD = .78) and women (M = 2.70, SD = .78) .73) did not differ in levels of co-rumination, t(281) = 1.16, p = .246. A paired samples *t*-test revealed that men reported higher average co-rumination scores when using the modified co-rumination questionnaire compared to the original, t(114) = 5.96, p < .001, d = .53, whereas women's average co-rumination scores were similar using both the modified and original co-rumination questionnaire, t(167)= 1.12, p = .265 (see Figure 1).

Confidant	Females (<i>n</i> = 168)		Males (n = 115)		Total (N = 283)	
	n	%	n	%	n	%
Same-sex Best Friend	75	44.64	40	34.78	115	40.64
Cross-sex Best Friend	16	9.52	27	23.48	43	15.19
Significant Other	44	26.19	17	14.78	61	21.55
Mother	23	13.69	14	12.17	37	13.07
Father	3	1.79	6	5.22	9	3.18
Roommate	4	2.38	3	2.61	7	2.47
Other	3	1.79	8	6.96	11	3.89

TABLE 1. Closest Confidants Breakdown by Number and Percentage

Confidant Choice and Co-Rumination. To test the hypothesis that co-rumination levels differed by gender and confidant choice, we conducted a 2 (female vs. male) × 4 (confidant choice) ANOVA with average co-rumination score as the dependent variable. Only samesex best friend, cross-sex best friend, romantic partner, and mother were included in the ANOVA due to low rates of selection for the other relationships. There was a marginally significant interaction effect, F(1, 82) = 2.61, p = .052, partial $\eta^2 = .03$. More specifically, confidant choice influenced co-rumination levels for men, F(3, 94) = 5.24, p = .002, partial $\eta^2 = .14$, but not for women, F(3, 158) = .51, p = .507 (see Figure 2). A post hoc Scheffe's test indicated that men who co-ruminated with a cross-sex friend reported higher levels of co-rumination than men who co-ruminated with a same-sex friend (p = .004). There were no other significant differences.

CO-RUMINATION AND DEPRESSION

Association with Depression. Both co-rumination questionnaires were tested for their strength of association with concurrent depression scores. The original co-rumination questionnaire was not correlated with concurrent BDI scores in this sample, r(283) = .06, p = .339, whereas the modified co-rumination questionnaire was significantly correlated with concurrent BDI scores, r(283) = .20, p = .001. There was a potential trend for the two correlations to be significantly different from each other, z = 1.69, p = .091.

Gender, Co-Rumination, and Depression. For exploratory purposes, we examined the strength of association between co-rumination

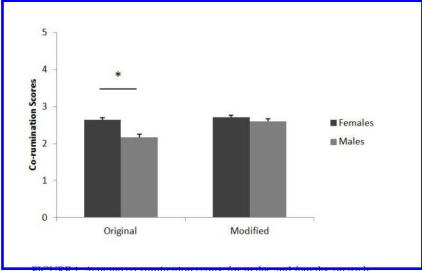


FIGURE 1. Average co-runtination scores for males and females on each co-rumination questionnaire.

Note. *p < .001.

and depression separately for men and women. There were no gender differences in the strength of association between co-rumination and depression when using the original co-rumination questionnaire, as the relationship between reported co-rumination and concurrent depression was not significant for women, r(168) = .07, p = .342, or men, r(115) = .05, p = .601. Interestingly, the modified co-rumination questionnaire was correlated with depression for women, r(168) = .29, p < .001, but not men, r(115) = .09, p = .347.

DISCUSSION

The overarching goal of the present study was to gain a better understanding of co-rumination in a young adult sample. Our first hypothesis was that when given the choice, young men and women may select different primary confidants than same-sex best friends. Our findings support the notion that college students are diverse in their choice of primary confidant. In support of our second hypothesis, we found that the gender difference in reported co-rumination scores noted in previous co-rumination research (e.g., Rose, 2002) disappeared when using the modified version of the questionnaire. The results also partially supported our third hypothesis, as the modified questionnaire, but not the original co-rumination ques-

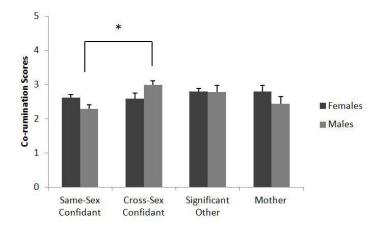


FIGURE 2. Co-rumination scores for females and males by confidant. Note. *p = .004.

tionnaire, was associated with concurrent depression. These findings have important implications for the study and measurement of co-rumination in young adults.

Our finding that college students' confidant choice is not limited to same-sex peers is in line with previous research showing that social networks become more diverse with age (Furman & Buhrmester, 1992; Monsour, 1997). The present findings provide a general picture of confidant choice in young adults. Women tend to select same-sex best friends as primary confidants followed, in order, by romantic partners, mothers, cross-sex best friends, roommates, fathers, and others. Men also tend to select same-sex best friends as primary confidants followed by cross-sex best friends, romantic partners, mothers, others, fathers, and roommates. Overall, we found that same-sex best friends, cross-sex best friends, mothers, and romantic partners were frequently (though not equally) chosen as primary confidants. Cross-sex friendships were of particular importance to our analyses since there is evidence that both males and females develop increasingly intimate relationships with cross-sex friends over the course of adolescence and into young adulthood (Blyth & Foster-Clark, 1987; Buhrmester & Furman, 1987; Johnson, 2004). College life, in particular, is a fertile ground for the development of cross-sex friendships and provides a number of structural opportunities for men and women to interact and thereby estab-

lish friendships with the opposite sex (Monsour, 2002). Our results also suggest that there are gender differences in primary confidant choice, with women being less likely than men to confide in cross-sex friends. This finding fits with previous research as well, indicating young women tend to feel closer and prefer talking to a same-sex friend (Baumgarte & Webster-Nelson, 2009).

The present study aimed to shed light on gender differences in reported co-rumination by taking into consideration varying relationships with primary confidants. Previous literature (e.g., Rose, 2002) has focused on examining co-rumination in same-sex best friendships or has asked participants to consider prescribed relationships (e.g., Calmes & Roberts, 2008). Using a modified co-rumination questionnaire that asked participants to indicate their relationship with their closest confidant, rather than having it restricted at the outset to a same-sex friendship, we found that previously observed gender differences in levels of reported co-rumination (e.g., Rose, 2002; Rose, Carlson, & Waller, 2007) disappeared. With regard to average co-rumination scores on the two versions of the questionnaire, males reported higher levels of co-rumination when using the modified questionnaire. Females, on the other hand, did not differ in their levels of reported co-rumination between the two questionnaires. Examining the effect of confidant choice (same-sex friend, opposite-sex friend, significant other, or mother) for men only, we found that men who co-ruminated with a same-sex friend reported lower co-rumination scores than men who co-ruminated with a cross-sex friend. There were no other differences in co-rumination based on confidant choice. This result highlights the potential importance of a best friend's gender when examining co-rumination in young men. Through adolescence and into young adulthood, males begin to perceive cross-sex friends as increasingly important (Baumgarte & Webster-Nelson, 2009; Dolgin & Kim, 1994). Males also tend to see female friends as more emotionally supportive and empathetic (Aukett, Ritchie, & Mill, 1988; Rose, 1985). Additionally, male friends are perceived by both sexes as more easy-going and fun companions for activities whereas female friends tend to be rated as better talkers (Dolgin & Kim, 1994). Men may simply not view their male friends as good emotional confidants, thereby limiting their levels of co-rumination when they primarily confide with a same-sex friend.

Given that females also find their female friends more supportive than male friends (Maccoby, 2002), it is interesting that women in our study still co-ruminated at about the same level with male friends as they did with female friends. One possibility is that females tend to be categorically more expressive and interpersonally oriented in dyadic relationships (Beneson, Apostoleris, & Parnass, 1997; Cross & Madson, 1997) and derive many of their social needs from such interpersonal interactions (Baumeister, 2005; Seeley, Gardner, Pennington, & Gabriel, 2003). These two factors may drive co-rumination levels across multiple relationships. It is possible then that females are simply more inclined to co-ruminate in a variety of relationships whereas males may only significantly increase their co-ruminating behaviors when their closest confidant is a female friend.

From a methodological standpoint, the present results suggest that when young adults report their co-rumination with their closest confidant in mind, the scores may be more strongly associated with depression. In the present study, the original co-rumination questionnaire, requiring participants to report on their co-rumination behaviors with a same-sex friend, was not correlated with concurrent levels of depression whereas the modified version was correlated with concurrent depressive symptoms. It should be noted that other studies to date have found the original co-rumination measure to be associated with depressive symptoms (Rose, 2002; Rose et al., 2007; Starr & Davila, 2009; Stone, Hankin, Gibb, & Azela, 2011). As such, the present findings noting differences between the modified and original co-rumination questionnaires and their relation to concurrent depressive symptoms are tentative and require further replication. Given that the modified version of the questionnaire had never been used before, we also explored the data to determine whether the strength of the relationship between co-rumination and depression was different for women and men. Scores on the modified questionnaire were only correlated with depression for women in the sample. This pattern suggests that the overall correlation between the modified co-rumination questionnaire and depression was driven entirely by the relationship between co-rumination and depression in women. Our results intimate that gender may actually moderate the relationship between co-rumination and depression in young adult college students, though this requires further examination by researchers in the field.

Many of the results of this study are novel and should be interpreted with caution pending further replication in larger samples and with different populations. In terms of limitations, the present study performed a number of analyses with some relatively small cells such as women who selected males as their closest confidants (n = 16). As a result, even though there is supporting evidence for our findings, results should again be interpreted with caution, particularly regarding comparisons of cross-sex and same-sex confidants for the female participants. Another potential limitation is that the two versions of the co-rumination questionnaire were administered at different times, leading to a less direct comparison of their association with depression scores. In support of our methodology though, BDI-II scores were highly correlated across both administrations. Furthermore, the original co-rumination questionnaire was highly correlated with the modified co-rumination questionnaire for those participants who selected a same-sex friend as their primary confidant. The findings of this study are also limited by the cross-sectional nature of the design, though we believe this approach was warranted considering the fact that the modified corumination questionnaire had not been used before. Future studies should examine the prospective utility of the modified co-rumination questionnaire in predicting young adults' depression scores.

While the present study offers insight into future methodological approaches to studying co-rumination, the real benefit of using a questionnaire that includes multiple relationships (also see Calmes & Roberts, 2008) is that researchers can begin to explore co-rumination levels in various types of relationships, understand what it means to have certain primary confidant relationships, and examine gender differences that also take into account the gender of the confidant. Using a modified questionnaire, the present study adds to the understanding of co-rumination in young adults. Our findings suggest that researchers should take into account the varied social networks of young adults and that the relationship with a primary confidant is associated with varying levels of co-rumination, particularly for males. Of note, there are additional potentially related interpersonal behavioral predictors of depression such as excessive reassurance seeking (Joiner & Metalsky, 2001) and negative feedback seeking (Swann, 1990). While co-rumination seems to differ conceptually from these two constructs, these three behaviors may occur within the same interpersonal interaction or relationship, or these vulnerability factors may cluster in the same individuals. The interplay and relationships amongst these variables as well as the mechanism through which they predict depression may be an area of future research. Ultimately, the present study offers a blueprint for researchers to continue expanding our understanding of co-rumination in adult populations and across a broader variety of relationships.

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