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Kelly Larsen
University of Richmond

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Running head: CORUMINATION IN VARIOUS SITUATIONS

*Friendship and Problem Solving: The Effect of Various Situations
on Co-Rumination in Emerging Adulthood Friendships*

by

Kelly Larsen

Honors Thesis

in

Psychology

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Advisor: Dr. Catherine Bagwell

Abstract

Co-rumination is the act of negatively discussing problems with another person. The focus of co-rumination is generally on the negative aspects, or things that cannot be changed as opposed to active problem solving. Co-rumination is positively associated with positive friendship quality as well as internalizing symptoms such as anxiety and depression. Co-rumination is most commonly studied in children and adolescents, but the present study extends this research by looking at the undergraduate population. In addition the current study aims to find differences in co-rumination in response to four different hypothetical scenarios. One hundred and thirty one students at the University of Richmond participated in this study, completing a series of questionnaires and free response questions. It was found that students are more likely to co-ruminate when another peer is involved, as opposed to intrapersonal problems. As hypothesized, co-rumination was associated with positive adjustment (i.e., high friendship quality) and negative adjustment (i.e., anxiety and depression). In conclusion, co-rumination seems to be more specific to interpersonal problems and can be both a positive and negative act for undergraduate men and women.

Keywords: Co-rumination, anxiety, depression, emerging adulthood

The Effect of Various Situations on Co-Rumination in Emerging Adulthood Relationships

Friendships in emerging adulthood are a very important part of development. As social beings, friendships are an essential part of our lives and more often than not, positively contribute to our individual wellbeing. We rely on our friends for social support in times of need and turn to them to help us solve problems. However, some friendships may also contribute to maladjustment. Rumination is the process of thinking about negative problems by oneself, and co-rumination extends this by bringing another person into the mix (Waller & Rose 2010). Co-rumination was first described by Rose (2002) as “excessively discussing personal problems within a dyadic relationship” (p. 1830) and includes revisiting problems, speculating about problems, and focusing on negative affect. Co-rumination is associated with both positive and negative outcomes. Past research has found that co-ruminating is associated with positive friendship quality and feelings of closeness. Alternatively, it is also associated with increased levels of anxiety and depression, especially among females who tend to co-ruminate more overall (Rose et al 2007). While there are positive benefits to co-ruminating with a friend, it can also be detrimental to the individual in terms of internalizing symptoms.

In general, previous research has focused on co-rumination and its adjustment trade offs in childhood and adolescence. Rose (2002) first used students in third, fifth, seventh and ninth grades, but expanded her research with a longitudinal study that followed children and adolescents over six months (Rose et al 2007). In this study children were assessed at two times for friendship quality, anxiety, depression, and co-rumination using a series of questionnaires. In support of their hypotheses, the results showed that co-rumination correlated with adjustment trade – offs over time. Co-rumination was predictive of feelings of closeness and positive friendship quality, but was also correlated with symptoms of anxiety and depression. This

conclusion about the negative trade offs was only found in girls, while boys seemed to reap the positive benefits of co-rumination. This is a very interesting finding because it suggests that for girls, friendship serves as both a positive and negative aspect of development, providing a context for discussing problems but also perpetuating feelings of anxiety and depression. Boys, however, only feel closeness with friends when they co-ruminate, which may suggest different ways of coping or thinking about various problems.

It was interesting to note, however, that symptoms of anxiety and depression were predictive of co-rumination for boys, but not for girls (Rose et al 2007). Other studies have also looked at depression as a predictor of co-rumination and have found similar results. Stone, Uhrlass, and Gibb (2010) found that children who were currently co-ruminating at high levels were much more likely to have had at least one major depressive episode as compared with children who were co-ruminating to a lesser degree. This was true of both boys and girls who were not currently depressed. Therefore it is difficult to determine the direction of causality between depression and co-rumination.

While co-rumination has been studied in adolescents with their mothers, few studies have included older samples. Calmes and Roberts (2008) observed co-rumination specifically in undergraduate students. In addition, this study provided a unique perspective by looking at co-rumination in a variety of important relationships for this age group. Calmes and Roberts (2008) looked at romantic partners, parents, and roommates in addition to the close friendships that are usually studied. Similar to previous research, this study found gender differences in co-rumination with same-sex close friendships and the same adjustment trade offs that have been found before. There was no gender difference or significant evidence for distress or relationship satisfaction in any of the other relationships that were examined. This finding suggests that close

friendships are most important during this time period of early adulthood, but also that co-rumination might be less influential at this time because it did not affect all of the relationships that were studied.

Undergraduate students are also particularly susceptible to mental health issues such as anxiety and depression, with the average age of onset of these types of disorder between 18 and 24. In the past fifteen years, the rates of depression in college-aged students have doubled, and anxiety disorders are also on the rise. Seventy-five percent of people with an anxiety disorder experience symptoms before age twenty-two, and a 2006 study found that 45% of women and 36% of men felt so depressed that they had difficulty functioning (Tartakovsky, 2008). A study of Australian university students found that 19.2% were experiencing a mental illness, with 67.4% of students having subsyndromal symptoms. In addition, the university students were much more likely to experience disability from their mental illness than the general population (Stallman, 2010). These figures were significantly higher than surveys of the general population, further confirming the risks and severity of internalizing disorders (such as anxiety and depression) among the college student population.

Another study of college students looked at the relationship between co-rumination and the stress hormone cortisol. This particular study elicited co-rumination with a “problem talk” condition as compared to a control where participants were asked to design a recreation center (Byrd-Craven, Geary, Rose, Ponzi, 2007). Stress was examined using salivary samples to measure levels of cortisol. This study was significantly more successful in eliciting co-rumination in the problem talk condition than in the control condition. In the problem talk condition, observed co-rumination was strongly correlated with increased levels of cortisol within fifteen minutes of discussing the problem. Also, co-rumination was only predictive of

cortisol levels in the problem condition, whereas those who co-ruminated in the control condition did not have a spike in cortisol. This is an extremely interesting finding because it suggests that co-rumination may need to be about a personal problem to be associated with the adjustment trade-offs. This study provided an important basis for the present research on the effects of various situations on co-rumination and internalizing symptoms.

Stress and depression have been linked both positively and negatively with life events and the ways in which an individual copes. One model proposes that strong social support acts as a buffer or will offset the negative health effects of stress. This model has been displayed in all age groups. For example, children who report low social support have a much higher probability of developing anxiety disorders or depression. Additionally, the way in which people cope with problems they face impacts stress. Active problem solving to change a stressor will affect one's levels of anxiety and depression differently than emotion focused coping that is more avoidant of the stressors' cause (Dumont & Provost, 1999). All of these aspects of internalizing symptoms and ways to combat them are important to the topic of co-rumination because of the strong association between them.

Another important aspect of co-rumination is that it is not really associated with active or effective problem solving. In previous research, the ability to problem solve effectively was negatively associated with future psychological stress (D'Zurilla & Sheedy, 1991). This is an important finding because it again highlights why co-rumination is associated with negative internalizing symptoms. Because co-ruminating only involves rehashing the negative pieces of a problem, there is no active problem solving. Negatively discussing a problem with no solution may explain why co-rumination is positively correlated with stress and depressive symptoms, but effective problem solving strategies show the opposite trend. It would be interesting to know if

active problem solving was as positively correlated with friendship quality as co-rumination is, though D’Zurilla and Sheedy (1991) did not examine this aspect of problem solving in their research.

The present study extends the existing research on co-rumination by further examining emerging adults (ages 18 -25) on a college campus,. The challenging academic environment, extracurricular commitments, social activities, and interpersonal relationships are main factors in a student’s life and shape their individual college experiences. While these environmental factors contribute to positive outcomes, such as identity exploration, academic growth, and feelings of self-worth, the stress that may accompany these experiences may also contribute to interpersonal problems, anxiety, and depression. Based on the previous research that co-rumination is correlated with negative outcomes, like anxiety and depression which are very prevalent among undergraduate students, one would think that co-rumination would be more common in the college environment as compared with the general population.

We hypothesized that co-rumination can be evaluated with an open-ended questionnaire and hypothetical scenarios, and that scores on these measures will correlate with scores on the Co-Rumination Questionnaire. We also expect co-rumination to be associated with adjustment trade-offs similar to what has been found in previous research. Specifically, we anticipate positive associations between co-rumination and high friendship quality and between co-rumination and internalizing distress (e.g. anxiety and depression symptoms). Additionally we hypothesize that co-rumination will occur most often in response to situations where there are problems in a close relationship with other emerging adults (interpersonal) as opposed to problems with others or with situations concerning only the participant (intrapersonal conflicts).

Method

Participants:

One hundred and thirty one University of Richmond students between the ages of 18 and 24 ($M = 19$ years) participated in this study as partial fulfillment of their Intro to Psychology research requirement or for compensation. Fifty-six participants were male while seventy-three were female and two participants did not report their gender. Ninety-six participants identified as Caucasian, seventeen identified as Asian/Pacific Islander, seven identified as Black, six identified as Hispanic/Latino, and five identified as other or multi-ethnic. Fifty-six participants were first-year students, thirty-seven were sophomores, twelve were juniors and twenty-four were seniors.

Procedure:

Participants were recruited for this study using SONA systems for Intro to Psychology students and through Spiderbytes for other college students. The participants came to take the survey either in Dr. Bagwell's lab or at other computers in Richmond Hall. They were greeted by a researcher and set up at a computer with the online survey. Participants were told to read the first page of the survey, the consent form, and that clicking "next" would be their consent to participate. Participants were told to continue with the survey and could stop at any point if they chose to do so. The survey consisted of a series of questionnaires and free response questions. In addition to demographic information the questionnaire included a modified version of the Co-Rumination Questionnaire (Rose, 2002), questions from the Ruminative Response Scale from the Response Styles Questionnaire (Nolen-Hoeksema & Morrow, 1991), the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985), the Center for Epidemiological

Studies Depression Scale (Radloff, 1977), and the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988).

At the completion of the survey, participants read a debrief form explaining that the purpose of the research was to look at co-rumination in a variety of situations. When the participants were finished they were thanked for their participation and Intro to Psychology students were awarded class credit and students recruited through Spiderbytes were paid five dollars.

Measures

Co-rumination. Co-rumination was evaluated using the Co-rumination Questionnaire (Rose, 2002). This questionnaire asks participants to indicate several different measures including the frequency of discussing problems, how often the participant and another person discussed problems instead of engaging in other activities, how often the participant encouraged the previously specified person to discuss problems, and how often the other person encouraged the participant to discuss her problems. In addition it looked to see if the same problems were discussed repeatedly, if the participant and other person speculated about the cause of problems, whether or not the participant and their friend speculated about the consequences of problems, if the participant speculated about aspects of the problem not understood, and if the participant and friend focused on the negative affect or feelings brought on by these problems. Participants responded to twenty-seven statements such as “We spend most of our time together talking about problems that my friend or I have” and how it applied to their relationship with a close friend on a 5-point Likert Scale (1= Not true at all, 5= Really true). A total co-rumination score was calculated as the mean score across all items for the particular relationship.

Rumination. The Ruminative Response Scale from the Response Styles Questionnaire (Nolen-Hoeksema & Morrow, 1991) assessed ruminative tendencies of the participants. This measures individual levels of rumination and provides comparison for levels of co-rumination. There were thirty-seven items to self-report on a 4-point Likert scale (1= Almost never, 4= Almost Always).

Self Disclosure and Relationship Quality. Relationship quality and self-disclosure between the participant and their same sex best friend was assessed with the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985). The NRI contains thirty questions that correspond to seven positive dimensions (companionship, instrumental aid, intimacy, nurturance, affection, admiration, reliable alliance), two negative dimensions (conflict, antagonism), and one dimension to assess relative power in the relationship. Participants respond to each item (e.g., “How much do you and this person talk about everything?”) using a 5-point Likert scale (1= Little or None, 5= The Most). Subscale scores for positive relationship quality and negative relationship quality were computed as the mean score for all items correlating with these dimensions.

Depression. To assess levels of depression, the Center for Epidemiological Studies Depression Scale (CES-D; adapted from Radloff, 1977) was used. The CES-D contains 20 self-report questions to be rated on a 4-point Likert scale (1= Rarely or none of the time, 4= Most or all of the time). The sum of all answers was calculated to evaluate levels of depressive symptoms.

Anxiety. Participants reported on their current level of anxiety using the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988). This self-report measure of anxiety

symptoms includes twenty-one questions rated on a 4-point Likert scale (0= Not at all to 3= Could barely stand it). Anxiety scores were calculated as a summation of all of these responses.

In addition, participants were asked to provide short open-ended responses to questions based on various hypothetical situations. The four situations were based on potential conflicts that are often found on college campuses. The first scenario dealt with an issue of academic competition with another peer who did not seem to be putting in as much effort as the participant, while the second was about a relationally aggressive friend who was spreading rumors about the participant. The third scenario was about parental pressure to find a summer internship, and the fourth scenario was about choosing a new major after being discontent with their first major.

Participants read each scenario and then responded to the following open-ended questions; “What would you do if this happened to you?” and “Whom would you talk to about this? (if applicable).” Then, participants completed eight items from the co-rumination questionnaire specifically about how they would talk with their best friend about the particular hypothetical scenario. For each scenario, a scenario-specific co-rumination score was calculated as the mean score on the eight questionnaire items for that scenario.

The content of the open-ended responses was coded according to a series of coding schemes, including the categories of people the participant would talk to about the problem (e.g., best friend, parents, roommates), the number of people with whom they would discuss the problem, the emotion words used in the response, and the specific behaviors in which they would engage (e.g., advice seeking, venting, doing nothing). In addition, the emotional intensity of the responses was rated on a 3-point scale, and responses were coded as either containing co-rumination or not.

Results

To examine the first hypothesis about adjustment trade-offs associated with co-rumination, we considered correlations among co-rumination, positive relationship quality, anxiety and depression symptoms, and rumination. As shown in Table 1, co-rumination was positively correlated with internalizing symptoms (anxiety and depression), friendship quality (both positive and negative), and rumination ($p < .05$). We also examined these correlations separately for men and women. For women, co-rumination was positively associated with depression as well as positive and negative friendship quality. In contrast, for men, co-rumination was significantly linked only with friendship quality.

To examine the second hypothesis about various hypothetical situations associated with co-rumination, we considered correlations among co-rumination and internalizing symptoms within each of the four scenarios. As shown in Table 2, co-rumination was positively correlated with positive friendship quality only in the scenario that dealt with a relationally aggressive friend ($p < .05$). For the three remaining scenarios, co-rumination was positively associated with negative friendship quality ($p < .05$). We also found that co-rumination was significantly linked to depression only in the scenario about academic competition.

Finally, a Chi Square test was run that examined the gender differences in co-rumination coded from open-ended responses to Scenario 1. Table 3 shows the distribution of co-rumination for men and women and indicates that 23% of women gave co-ruminating responses to this hypothetical scenario compared to only 7% of men, $\chi^2(1) = 6.06, p < .05$. In terms of participants' self reports of co-ruminating in response to each scenario, there were no significant gender differences (see Figure 1), yet the mean scores are in the direction of greater co-rumination for women in response to interpersonal problems.

Discussion

The present study examined the impact of various situations on co-rumination and its adjustment trade offs. It was hypothesized that co-rumination would be associated with positive friendship quality, as well as anxiety and depression, and that this trend would be stronger for women than for men. We also hypothesized that co-rumination would be more prevalent in situations that involved a close peer relationship as opposed to situations based on more internal problems. Support for both of these hypotheses was found. Surprisingly, there was not as strong a gender difference in the present study as there has been in past research. While women did show a trend towards co-ruminating more than men, and experiencing more of the adjustment trade offs, some of the same things were found in men. This was especially true with rates of depression, where men were also experiencing more depressive symptoms than the past research has shown. Depression in males however, was still not significantly associated with co-rumination, reinforcing the idea that males get only the positive benefits of co-rumination (friendship quality) without significant internalizing distress.

The current study also supported past research in showing that negative adjustment trade-offs (e.g. anxiety and depression) are positively associated with co-rumination in women but not in men. Rose et al. (2007) suggest that this could be due to different coping styles in men and women, and personality differences that are associated with different genders. Although depression and anxiety were present in males and females, the correlation in males was not significant like it was in females. Again this is something that was expected, since the rates of mental illness or disturbance are markedly higher in undergraduate populations than the general population (Stallman 2010). The results of this study do support the theory that co-rumination affects women more negatively in terms of internalizing symptoms than men.

There was also a trend toward more co-rumination in interpersonal scenarios (scenarios 1 and 2) compared to intrapersonal scenarios (scenarios 3 and 4). This supported our final hypothesis as well as some of the past research about co-rumination in different scenarios or with different types of problems. Davila, Hammen, Burge, Paley, & Daley (1995) looked at problem solving of interpersonal problems and its relation to stress. They found that poor interpersonal problem solving led to higher levels of stress, which in turn leads to higher levels of depression. Other past research also found that interpersonal problems and conflicts were associated with depressive symptoms. An interesting finding of the present study was that depressive symptoms were only significantly associated with the scenario regarding academic competition with a peer. This is somewhat surprising but could be due to several factors. One possible reason for this association could be the way in which the scenario was worded, as it made the person reading it feel like they were in a somewhat hopeless situation. Feeling like there is little you can change about a particular situation could lead to more symptoms of depression than the other scenarios. While it was surprising that the other interpersonal scenario did not also elicit more depressive symptoms, this finding was still significant and was logical for the situation presented. The present research built upon previous studies by looking at the difference between interpersonal and intrapersonal conflicts, and concluded that interpersonal scenarios did lead to co-rumination, which we know is correlated with depressive symptoms and anxiety.

One of the limitations of this study was that the free response questions might not have been specific enough to elicit responses indicating co-rumination. The free response questions were just simply “what would you do?” and “who would you talk to?” which did not necessarily get at the emotional intensity of the situation or how often it would be discussed. For this reason it was very difficult to discern co-rumination based on the responses to these questions, which

decreased our chances of significantly explaining our hypothesis. It was still possible however, in some cases to tell if the participant was co-ruminating and we were able to find a significant trend in the difference between men and women when it comes to co-ruminating. Had the questions been slightly different, it could have potentially been easier to tell if the participant was co-ruminating in that particular situation.

An area of further research could be to test more interpersonal scenarios to see specifically where co-rumination is most common, or differences between various scenarios. The present study started to look at this aspect of co-rumination by presenting two interpersonal scenarios and two intrapersonal scenarios for participants to consider. Since it was found that co-rumination more often occurred in interpersonal scenarios, it could be important to look at what factors specifically are associated with co-rumination. A study of co-rumination in the workplace also demonstrated the importance of examining co-rumination in different settings. Haggard, Robert, and Rose (2010) found that negative events in the workplace can have effects on the people involved as well as their families. For women in the study that were experiencing high levels of stress and co-rumination, there was also a more negative impact on their families. This finding is very interesting because it starts to explore how the negative effects of co-rumination can affect many people.

Another area of further research would be to look at co-rumination and problem solving styles. In looking at the free response answers, it was evident that there were many ways of dealing with a problem, from venting to asking for advice. It could be beneficial to examine how these specific problem-solving strategies are correlated with co-rumination. Since we know that co-rumination is not associated with active problem solving based on the nature of the act, it could be interesting to find out what other actions (or lack there of) would be correlated with

higher rates of co-rumination. Research could also look at these different ways of problem solving and their relation to depression and anxiety to try and explore further the direction of causality between co-rumination and internalizing symptoms. Based on the variety of responses that were seen in the free response answers this new study could definitely build off of the current research.

A final area of further research would be to examine with whom the participants are co-ruminating in the hypothetical scenarios. When looking at the free response answers, there were a lot of different people that the participants reported they would discuss the problem with. It would be interesting to explore which of these people you are most likely to co-ruminate with and who you are more likely to active problem solve with. Waller & Rose (2010) examined this a little bit with mother/adolescent co-rumination and found that mothers were more likely to co-ruminate with their daughters than their sons. While this is probably because women are more likely to co-ruminate than men, it is still an interesting point to think about who you chose to co-ruminate with and who you are more likely to problem solve with. In examining the four hypothetical scenarios, it would be interesting to further the present study by finding with whom undergraduates are most likely to co-ruminate.

The present study aimed to explore the effect of four different hypothetical scenarios on co-rumination. It also examined the adjustment trade-offs in undergraduate men and women as compared with total co-rumination. The results of this study showed that there was a non-significant gender difference in terms of co-rumination, however females did show a trend towards co-ruminating more than males did. Most notably, co-rumination was associated with adjustment trade-offs because it was linked both with positive friendship quality and with internalizing distress. It was also found that undergraduate students were more likely to co-

ruminate in situations that involved another peer (interpersonal) than when the problem was more individual (intrapersonal). This study built upon past research by exploring co-rumination in emerging adulthood as well as trying to use free response answers as a way to confidently determine co-rumination. While there were limitations to the way in which the free response questions were asked, the present study expanded upon past research and found important trends and correlations between co-rumination and adjustment trade-offs in the undergraduate population.

Appendix

Table 1: Correlation Rates of Co-rumination With Several Measures Separated by Gender

Measures	Total	Male	Female
Depression	.18*	.24	.13*
Anxiety	.18*	.17	.17
Pos. Friendship Quality	.33**	.22*	.36**
Neg. Friendship Quality	.24**	.32*	.24*
Rumination	.26**	.44	.14

*Correlation is significant at the 0.05 level

** Correlation is significant at the point 0.01 level

Table 2: Correlation Rates for Co-rumination and Related Factors for Each of the Four Scenarios

	Depression	Anxiety	Pos. FQ	Neg. FQ
Scenario 1	.19*	.15	.04	.25**
Scenario 2	.14	.17	.28**	.15
Scenario 3	.16	.05	.11	.22*
Scenario 4	.12	.05	.13	.19*

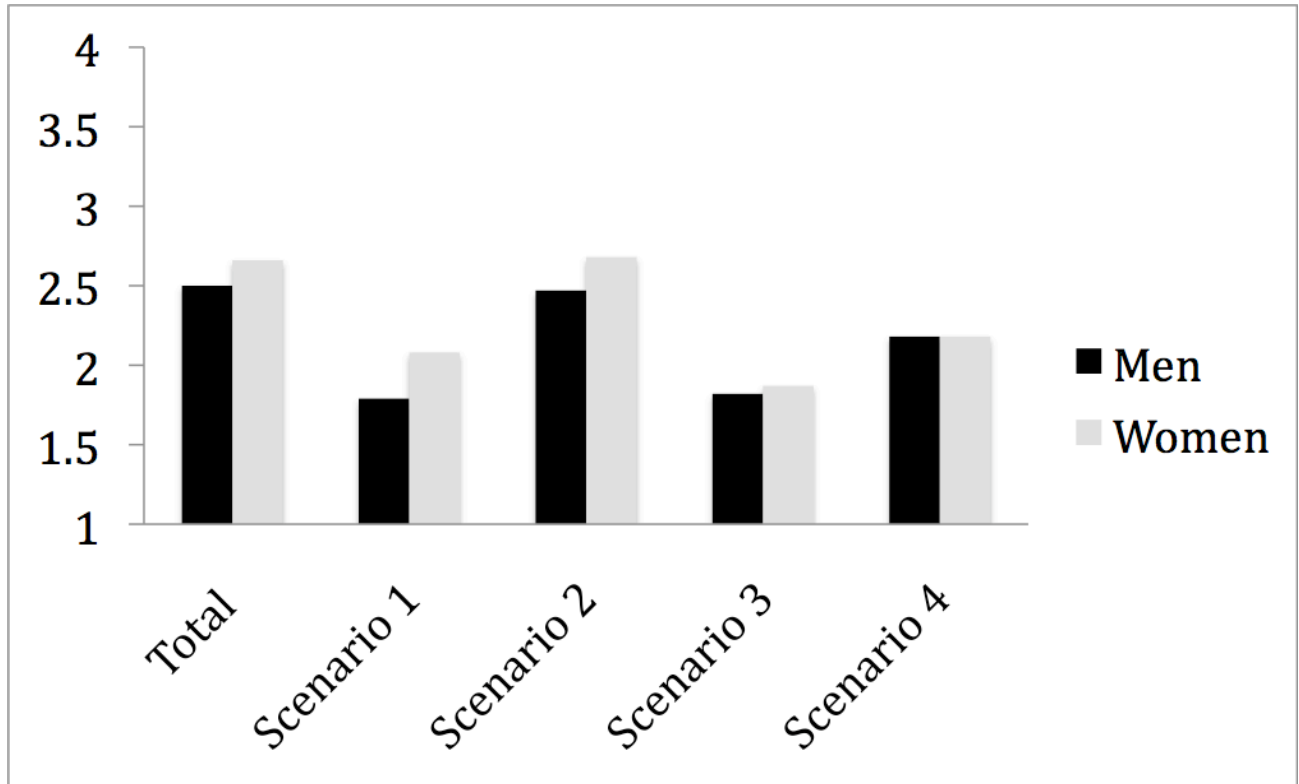
*Correlation is significant at the 0.05 level

** Correlation is significant at the point 0.01 level

Table 3: Co-Rumination in Males and Females in Scenario 1 self-report answers as compared to total co-rumination for that Scenario

	Male	Female
No co-rumination	93%	77%
Co-rumination	7%	23%
Total Significance (M and F)	$\chi^2 (1) = 6.06, p < .05.$	

Figure 1: Gender Differences in Co-rumination in response to hypothetical Scenarios



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