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Social Media Usage and Romantic Development: Testing Attachment Anxiety and Avoidance as Moderators

Molly D. Moeller

ABSTRACT

Social media use is linked with the development and maintenance of romantic relationships, exhibiting both positive and negative effects on relationship quality depending on the social media behavior. However, many of these studies focus on a singular social media platform rather than multiple social media platforms. Also, studies on Facebook have linked anxious attachment to more surveillance and Facebook-induced jealousy (Marshall, Benjanyan, Di Castro, & Lee, 2013). Thus, the impact of social media behaviors for relationship quality may depend on attachment behaviors. Therefore, the goal of the current study is to examine how attachment avoidance and attachment anxiety predict relationship quality for established and developing relationships. Data comes from 183 college students (86.9% female, 87.4% heterosexual) who completed an online survey for ten consecutive days regarding their social media use and quality of their relationship with a romantic partner or crush. Results of linear regression analyses illustrated that avoidance was negatively associated with relationship quality for established relationships, whereas minutes spent private messaging a crush was positively associated with relationship satisfaction. Additionally, anxiety moderated the relationship between commenting and posting photos of partners for relationship satisfaction for established relationships. Avoidance moderated the relationship between commenting and relationship satisfaction for established relationships. No interactions were found between attachment behaviors and social media behaviors for quality of relationships between single participants and crushes. Attachment anxiety and avoidance may explain how social media promotes and hinders

the quality of established relationships. Implications regarding attachment security and social media use will be discussed.

Keywords: Social media, Romantic relationships, Relationship quality

INTRODUCTION

The majority of emerging adults in the United States have at least one or more social media platform, which they visit regularly (Greenwood, Perrin, & Duggan, 2016; Lenhart, 2015). Statistics show that 7 in 10 Americans use social media (i.e., Social Network Sites, SNS) to communicate and connect with others (Pew Research Center, 2017). Additionally, social media use is linked with the development (Fox, Warber, & Makstaller, 2013; Mansson & Meyers, 2011) and maintenance of modern romantic relationships (Billedo, Kerkhof, & Finkenauer, 2015; LeFebvre, Blackburn, & Brody, 2015; Lukacs & Quan-Haase, 2015). Based on the SNS literature, social media can have both positive and negative effects on relationship quality depending on the social media behavior (Seidman, Langlais, & Havens, 2017). For example, posting dyadic pictures on social media has been found to be beneficial for relationship satisfaction (Toma & Choi, 2015), whereas monitoring significant others' social media content is associated with jealousy and conflict (Utz, Muscanell, & Khalid, 2015). However, many of these studies focus on a singular social media platform, such as Facebook or Twitter, rather than examining multiple social media platforms simultaneously. Essentially, there are nuanced effects for relationship quality depending on social media behavior and platform.

Another variable associated with social media use and relationship quality is attachment style. Attachment theory states that individuals who are secure are better relationship partners, whereas those individuals who experience high anxiety or high avoidance in their relationships report lower relationship quality (Feeney & Noller, 1990; Simpson, 1990). There is also research

that illustrates that individuals who experienced high attachment anxiety spend more time on Facebook, which is negatively associated with interpersonal and relational health (Kalpidou, Costin, & Morris, 2011), and individuals reporting high avoidance spend less time on Facebook (Fox & Tokunaga, 2015). Although these studies have advanced research on social media and romantic relationships, the bulk of this research has focused on Facebook, rather than multiple social media platforms (Marshall et al., 2013). Given the mixed effects for social media use for relationship quality, attachment theory may help predict why some social media behaviors may be good for relationships, whereas other behaviors may be bad for relationship development. Therefore, the goal of the current study is to examine how attachment avoidance and attachment anxiety predict relationship quality for established and developing relationships.

The current study advances the literature by expounding on past studies. First, we focus on multiple social media platforms, since few studies examine multiple platforms simultaneously. Second, we include a longitudinal approach, where we have participants complete an online survey for ten consecutive days, which allows us to examine independent and dependent variables over time, an approach that past studies have suggested (i.e., Seidman, Langlais, & Havens, 2017). Third, we examine both established romantic relationships and relationships between single individuals and their crushes, since few studies have examined the latter. The current study advances the SNS literature by examining whether attachment anxiety and attachment avoidance moderates the relationship between social media behaviors (monitoring a partner or crush, making comments on partner or crush's social media, making updates about relationship with partner or crush, private messaging a partner or crush, and posting photos of partner, crush, or relationship) and relationship quality (daily relationship satisfaction, commitment, and relationship closeness).

ATTACHMENT THEORY AND SOCIAL MEDIA

To introduce this study, it is important to establish a theoretical foundation. The current study uses attachment theory as the groundwork for study hypotheses. According to this theory, there are four adult attachment styles (secure, preoccupied, dismissing, and fearful), which are based on two broad variables: avoidance of intimacy and anxiety about abandonment (Roisman, 2009; Simpson 1990). These variables we refer to as *avoidance* and *anxiety*. In the context of romantic relationships, avoidance refers to whether or not an individual generally evades the formation of intimate relationships. For example, avoidant individuals are likely to focus on their own individual goals, rather than on the goals of someone else or of a relationship. Anxiety is the feeling of apprehension or panic when interacting with a potential or current partner. An example of an anxious individual would be worrying about whether a partner may abandon the relationship or anxiety that someone is not worthy of being in a relationship (Roisman, 2009; Simpson, 1990). Individuals who are not avoidant and are not anxious have a secure attachment with romantic relationships, which is generally beneficial for relationship quality (Bartholomew & Horowitz, 1991; Collins & Feeney, 2000). Individuals who are avoidant and anxious have a fearful attachment style regarding romantic relationships. Individuals who have low avoidance and high anxiety have a preoccupied attachment style with romantic relationships, and those who have low anxiety and high avoidance have the dismissing attachment style. These three insecure attachment styles are generally negatively associated with relationship quality (Bartholomew & Horowitz, 1991; Simpson, 1990).

Adult attachment style is the most common theory used to examine SNS and romantic relationships (Rus & Tiemensma, 2017). Generally, both anxiety and avoidance predicted negative associations between SNS use and relationship quality. For example, studies have found

that anxious individuals spend more time monitoring their romantic partner's social media profiles and behaviors, with monitoring predicting lower relationship quality (Fox & Warber, 2014; Muise, Christofides, & Desmarais, 2014). Emery et al. (2014) found that individuals reporting high attachment anxiety want more SNS visibility, while individuals reporting high attachment avoidance want less SNS visibility. If the experienced visibility was opposite of what an individual sought, the quality of the relationship was likely low (Emery, Muise, Dix, & Le, 2014). Additionally, attachment anxiety was associated with interpreting romantic partners' SNS content as negative compared to those low in anxiety (Fleuriet, Cole, & Guerrero, 2014). Marshall et al. (2013) illustrated that attachment anxiety was positively related to jealousy and surveillance on Facebook while avoidance was negatively related to these behaviors. Generally, literature on SNS, specifically Facebook, illustrate that anxiety and avoidance are negatively related to relationship quality. Therefore, it is likely that avoidance and anxiety will also be negatively associated with relationship quality across multiple social media platforms, as well as for single participants with a crush.

Hypothesis 1: Attachment avoidance and attachment anxiety will be negatively associated with daily relationship satisfaction and commitment with established romantic relationships.

Hypothesis 2: Attachment avoidance and attachment anxiety will be negatively associated with daily relationship satisfaction and closeness with single participants and their crushes.

SOCIAL MEDIA AND ROMANTIC RELATIONSHIPS

SNS use is associated with boosts and declines in relationship quality. In order to discern how SNS impacts relationship quality, studies have focused on specific behaviors; some

behaviors appear to be more detrimental for relationship quality, whereas others appear to be more beneficial. Self-presentation, such as dyadic profile pictures and posts, appear beneficial for relationship quality, in addition to communication via SNS. For instance, Toma and Choi (2015) found that self-presentation cues on Facebook, such as having a dyadic profile picture, posting dyadic photos, and writing on a romantic partner's wall, were associated with increased relationship commitment for dating couples, as well as an increased likelihood of remaining together six months later. Emery et al. (2014) found a positive relationship with increased visibility of one's romantic relationship on Facebook and relationship satisfaction and commitment. Social media also provides opportunities to self-disclose more often with potential or current romantic partners. Regarding communication, a large-scale study found that directed one-to-one communication on Facebook was associated with greater feelings of closeness (Burke & Kraut, 2014). Additional evidence suggests that using social media during relationship development may assist the relationship formation process. Fox, Warber, and Makstallar (2013) revealed that Facebook is one of the primary means of uncertainty reduction in the initial stages of relationship formation.

Research also illustrates that social media is related to declines in relationship quality. Generally, monitoring and oversharing relationship information on social media appears detrimental to the quality of romantic relationships, commonly by increasing relationship jealousy. Passive consumption of romantic partners' Facebook content, referred to as monitoring (Tokunaga, 2011), can lead to jealousy (LeFebvre et al., 2015; Muise, Christofides, & Desmarais, 2009), which can threaten the quality of romantic relationships. Facebook users may be exposed to information on their partners' profiles they would not otherwise encounter (Muise et al., 2009), such as who their romantic partners are friends with, whom they talk with, and how

they spend their time without physically being with the partners, which can lead to feelings of jealousy. Additionally, Billeto et al. (2015) found that individuals in long distance relationships used SNS more for partner surveillance compared to those in proximal relationships, which resulted in increased jealousy. However, some discrepancies regarding exist increased jealousy based on social media platform. For example, Utz and colleagues (2015) found using SnapChat increased jealousy in romantic relationships more than using Facebook. These researchers found that SnapChat was used more for flirting, whereas Facebook was used primarily for networking and keeping in contact with friends. In addition to jealousy, excessively displaying one's relationship on Facebook was associated with declines in relationship satisfaction (Seidman, Langlais, & Havens, 2017). The association between SNS use and relationship quality appears to vary by the specific behavior an individual engages with on social media. However, as previously mentioned, the bulk of this research focuses on Facebook rather than multiple social media platforms. Subsequently, no research to our knowledge examines how using social media negatively impacts developing romantic relationships.

Based on the research on Facebook, social media behaviors and attachment style influence relationship quality. Given the significance of these variables, it is possible that anxiety and avoidance may moderate the relationship between SNS behaviors and relationship quality, when examining multiple social media platforms. For instance, someone who is high in avoidance is likely to ignore or delay responding to SNS messages, which may prompt conflict in relationships. On the other hand, individuals who are high on anxiety may be more likely to negatively overanalyze information sent or received on social media, which could hinder relationship quality. Based on the SNS literature, most studies on attachment and social media examine a single social media behavior, such as posting pictures or monitoring (Rus &

Tiemensma, 2017). The current study advances the SNS literature by examining multiple social media platforms as well as multiple social media behaviors in the context of developing and established romantic relationships. Theoretically, attachment theory illustrates that individuals who are high in anxiety and high in avoidance are more likely to experience lower quality relationships (Bartholomew & Horowitz, 1991; Feeney & Noller, 1990; Roisman, 2009). Based on this information, we proffer the following hypotheses:

Hypothesis 3: Attachment anxiety will moderate the relationship between relationship quality (daily relationship satisfaction, commitment, and closeness) and social media behaviors (monitoring a partner or crush, making comments on partner or crush's social media, making updates about relationship with partner or crush, private messaging a partner or crush, and posting photos of partner, crush, or relationship) for coupled and single participants.

Hypothesis 4: Attachment avoidance will moderate the correlation between relationship quality and social media behaviors for both coupled and single participants.

METHOD

Participants

Participants were recruited from two sources. Undergraduates at a liberal arts college in the Northeastern United States were offered extra credit for participation in the study ($n = 83$), and undergraduates enrolled in four different Intimate Relationships courses at a mid-size university in the Midwestern United States were offered a grade for study completion ($n = 99$). The average age of participants was 19.48 years old ($SD = 1.75$) and the majority of the participants were female (86.9%). Approximately 77.6% of participants were White/Caucasian, 11.5% Black/African-American, 2.7% Asian or Pacific Islander, 4.4% Hispanic, 1.0% American

Indian, and 2.7% Other. The majority of participants were also freshmen (51.4%) and heterosexual (87.4%). Of the 183 participants in the study, 78 reported their relationship status as single, 20 as casually dating, 84 as seriously dating, and one as married. There were some significant differences based on college. Participants who were from an ethnic or sexual minority were more likely to be from the small liberal arts college in the Northeast than the mid-size university in the Midwest ($F(2, 182) = 15.26, p < .001$; $F(2, 182) = 7.94, p < .01$, respectively). However, there were no significant differences according to gender. Demographic statistics for each study sample were representative of the areas in which they were recruited. Descriptive statistics of study sample by gender are presented in *Table 1*.

Procedure

Participants were recruited through announcements in courses taught by the second and third authors. Neutral third parties came to classes to discuss the study. These announcements told students the goal of the study, requirements for participation, and remuneration (extra credit for students from the college in the Northeast and a completion grade for students from the university in the Midwest). Interested students provided their e-mail address to the neutral party presenting the study. Students from the university in the Midwest were offered an alternative assignment if they did not want to participate in the study to prevent coercion (five students completed the alternative assignment rather than the study; 4.8%). Additionally, 25.6% of the students from the liberal arts college in the Northeast completed the study for extra credit. Participants completed an online survey for ten consecutive days (Retention = 81.9%). A link to each survey was e-mailed to participants at 9:00pm, beginning on a Tuesday evening and ending on the next Thursday evening. All participants were given a random four digit code that they would enter at the beginning of each survey in order to align participant data. The first survey,

which we will refer to as the baseline survey, asked participants questions about their attachment anxiety, attachment avoidance, and demographic information, such as age, gender, relationship status and education. For the baseline and the following nine surveys, participants answered questions regarding how often they engaged in various social media behaviors with romantic partners or crushes, such as how often they posted pictures of their partner/crush and how many minutes they monitored the activity of their romantic partner/crush. Participants in romantic relationships reported daily levels of relationship satisfaction and closeness with their romantic partners, whereas single participants answered questions about their daily levels of relationship satisfaction and closeness with their crushes. Participants who were not in a romantic relationship identified their current romantic crush ($n = 78$). If participants had multiple crushes, they were asked to identify the most serious crush. Although participants were offered the option of “No Crush,” no participant selected that option. It is important to note that single participants reported significantly more attachment anxiety (Mean = 4.06; $SD = 1.20$) and attachment avoidance (Mean = 3.26; $SD = 1.09$) compared to participants in romantic relationships (Anxiety Mean = 3.64; $SD = 1.07$; Avoidance Mean = 2.42; $SD = .98$; $F(2, 182) = 5.92, p < .01$; $F(2, 182) = 28.76, p < .001$, respectively). The baseline survey took approximately 30 minutes to complete, with the remaining nine surveys taking an average of ten minutes to complete. All procedures for this study were approved by the appropriate Institutional Review Boards.

MEASURES

Relationship quality. Participants in romantic relationships answered questions about relationship satisfaction and commitment to their romantic partners on each daily survey. For relationship satisfaction, participants answered an altered form of the Relationship Assessment Scale (RAS; Hendrick 1988). Examples of this 7-item scale include, “How good is your

relationship compared to others TODAY?” and “How much do you love your partner TODAY?”. Responses for each item ranged from 1 (*Low*) to 5 (*High*). This scale demonstrated acceptable internal consistency (Cronbach’s alpha = .81) and the average level of satisfaction reported by participants was 4.21 ($SD = .54$). Coupled participants also answered questions about their daily commitment to romantic partners using an altered version of Stanley and Markman’s (1992) measure of commitment, which asked participants to respond to four items on a scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). An example was, “TODAY, my relationship with my romantic partner is more important to me than almost anything else in my life.” This scale demonstrated adequate internal consistency (Cronbach’s alpha = .79) and the average level of satisfaction reported by participants was 3.97 ($SD = .96$).

For participants who reported their relationship status as single, they answered questions regarding relationship satisfaction and relationship closeness with their crushes. Both of these scales were based on the Perceived Relationship Quality Components scale by Fletcher, Simpson, and Thomas (2000), but were adapted to measure daily relationship satisfaction and closeness with a romantic crush. An example item for relationship satisfaction was, “How satisfied are you with your relationship with your crush today,” and an example item for closeness was, “How close do you feel to your crush after today?” Responses for each item ranged from 1 (*not at all*) to 7 (*very much*). The average relationship satisfaction with a crush was 3.93 ($SD = 1.74$) and this scale displayed acceptable internal consistency (Cronbach’s alpha = .92). The average relationship closeness with a crush was 3.46 ($SD = 1.66$) and this scale displayed acceptable internal consistency (Cronbach’s alpha = .93).

Social media behaviors. For the current study, participants answered questions regarding the frequency of six different social media behaviors with current or potential romantic partners

on each daily survey. First, participants were asked, “How many comments did you make on your romantic partner’s or crush’s social media content today? We refer to this behavior as *commenting*. Second, participants were asked, “How many minutes did you spend looking at your partner’s or crush’s social media today?,” which we refer to as *monitoring*. Third, participants answered the following question referencing *updating*, “How many updates did you post regarding your relationship with your partner/crush on social media, not including photos and videos? Fourth, we asked specifically about photos and videos through two separate questions: “How many photos/videos did you post publicly of your relationship/relationship with your crush to social media today?” and “How many photos/videos did you post publicly of your romantic partner/crush to social media today? The former we refer to as *photos of relationship* and the latter as *photos of partner*. Last, participants answered the following question regarding *private messaging*, “How many minutes did you spend private messaging your romantic partner/crush on social media today?” For the current study, the mean of each social media behavior across the entire survey was calculated and used for analyses. The average for each social media behavior across all ten days of the study is listed in *Table 1*.

Attachment avoidance. The measure of attachment avoidance was based on Brennan et al. (1998), which is a short version of the anxiety and avoidance scale proffered by Bartholomew and Shaver (1998). This scale was comprised of six items, such as “I am nervous when my partner gets close to me.” Responses ranged from 1 (*disagree strongly*) to 7 (*strongly agree*). The mean score of attachment avoidance across the study was 2.78 ($SD = 1.11$) and the scale displayed acceptable internal consistency (Cronbach’s alpha = .83).

Attachment anxiety. The measure of attachment anxiety was also adapted from Brennan et al. (1998). This scale was comprised of six items, such as “I need a lot of reassurance that I am

loved by my partner” with responses ranging from 1 (*disagree strongly*) to 7 (*strongly agree*).

The mean score of attachment anxiety across the study was 3.82 ($SD = 1.82$) and the scale displayed adequate internal consistency (Cronbach’s $\alpha = .73$).

Control variables. For all analyses, we controlled for a variety of demographic variables to be consistent with past studies on social media and romantic relationships (Rus & Tiemensma, 2017; Seidman, Langlais, and Havens, 2017). The following variables were included in each analysis: age, gender, ethnicity (dichotomized), sexual orientation (dichotomized), and education. Ethnicity was dichotomized as 0 = white, 1 = non-white. Sexual orientation was dichotomized as 0 = heterosexual, 1 = non-heterosexual. Education was measured on a scale from 1 (*freshman*) to 5 (*five or more years in college*).

DATA ANALYSIS

To test the relationship between attachment avoidance and anxiety with relationship quality for coupled (Hypothesis 1) and single participants (Hypothesis 2), and to test whether attachment anxiety and avoidance moderated the relationship between social media behaviors and relationship quality (Hypothesis 3 and 4), multi-level linear regression analyses were conducted. Control variables were entered in Step 1: age, sex, ethnicity (dichotomized), sexual orientation (dichotomized), and education. The main effects of attachment anxiety, attachment avoidance, and each social media behavior (commenting, monitoring, updating, private messaging, posting photos of relationship, and posting photos of partner/crush) were included at Step 2 (which directly tested Hypothesis 1 and 2). In order to control for the moderating influence of attachment anxiety and avoidance, the interaction between attachment anxiety/attachment avoidance and each social media behavior were entered in Step 3 (which directly tested Hypothesis 3 and 4). Relationship quality was the criterion variable (daily

relationship satisfaction and commitment for coupled participants; daily satisfaction and closeness with crush for single participants). All variables were mean centered to reduce correlations between interactions and main effects. We examined changes in R^2 when predictor variables were added to the second and third steps for each model to illustrate the variability explained by study variables.

RESULTS

The first hypothesis of the study predicted attachment anxiety and avoidance would be negatively associated with relationship quality for coupled participants. Results of this analysis are presented in both columns marked “Step 2” in *Table 2*. According to this analysis, avoidance was negatively associated with relationship satisfaction and commitment, whereas anxiety was unrelated to relationship quality for coupled participants. Additionally, monitoring romantic partners on average across the study was associated with increased commitment for coupled participants. The variance explained by both models according to changes in R^2 was significant, demonstrating that the main effects of attachment anxiety, avoidance, and social media behaviors predicting daily relationship satisfaction explained 40.8% of the variance, and the main effects of the model predicting commitment explained 27.6% of the variance. The second hypothesis of this study predicted attachment anxiety and avoidance would be negatively associated with relationship quality between single participants and their crushes. Results of this analysis are presented in both columns marked “Step 2” in *Table 3*. According to this analysis, attachment anxiety and avoidance were unrelated to relationship quality. However, private messaging a crush on average across the 10-day study was positively associated with relationship satisfaction with crushes. Also, the model predicting commitment with these predictors was significant based

on the value of the change in R^2 , illustrating that 33.4% of the variance was explained by including these main effects in the model.

The third hypothesis of this study predicted attachment anxiety and avoidance would moderate the relationship between social media behavior and relationship quality for coupled participants. First, significant main effects were found for the model predicting daily relationship satisfaction. Posting photos of the relationship on a daily basis was negatively associated with relationship satisfaction, and posting photos of the partner on a daily basis was positively associated with relationship satisfaction. Additionally, the interaction between anxiety and commenting was significant. This interaction is displayed in *Figure 1*. According to this figure, participants who report high commenting and low anxiety report the highest levels of relationship satisfaction, whereas individuals who report high comments and low anxiety report the lowest levels of relationship satisfaction. Generally, low levels of anxiety combined with high commenting illustrated slightly higher levels of relationship satisfaction compared to participants who didn't comment as much with their romantic partners' social media and reported low anxiety. The interaction between anxiety and posting pictures of a romantic partner was also significant. This significant interaction is displayed in *Figure 2*. According to this figure, participants with low anxiety, but post high numbers of pictures of their romantic partner, report significantly high daily levels of satisfaction, whereas individuals who post low photos of their partner, regardless of anxiety, report the lowest levels of daily relationship satisfaction. Additionally, the interaction between avoidance and commenting on romantic partners' social media was significantly predictive of daily relationship satisfaction. This interaction is presented in *Figure 3*. According to this figure, participants who reported high avoidance, but low commenting, reported the highest levels of daily relationship satisfaction. Additionally, high

comments and high avoidance associated with the lowest levels of relationship satisfaction for coupled participants. Individuals reporting low avoidance but high commenting reported slightly higher levels of relationship satisfaction with romantic partners compared to individuals who reported low comments and low avoidance. No interactions for commitment were significant. Although the values in R^2 were not significant, the variance explained by the interaction terms predicted 11.1% of the variance for daily relationship satisfaction and 12.3% of the variance for commitment.

The fourth hypothesis of this study predicted that attachment anxiety and avoidance would moderate the relationship between social media behavior and relationship quality for single participants. Results of this analysis are presented in both columns marked “Step 3” in *Table 3*. However, no main effects or interactions were significant for daily relationship satisfaction or relationship closeness. Additionally, the variance explained by including these variables was not significant according to the changes in R^2 .

DISCUSSION

The goal of this study was to better understand the role of social media and attachment for romantic relationship development and maintenance by examining SNS behaviors across multiple platforms, using a daily average of these behaviors and relationship quality. The results of this study show anxiety and avoidance contributed to the relationship between SNS behaviors and relationship quality, particularly for those in established romantic relationships. Results of this study provide implications for promoting romantic relationship quality and healthy romantic development.

Based on study results, attachment anxiety and avoidance were negatively related to relationship satisfaction for those participants in relationships, but not between single

participants and their crushes. There are a few potential explanations for these results. First, it is unlikely for an individual to form an avoidant or anxious attachment with someone they do not know well, particularly someone they have not entered into a relationship with. Developing an attachment with an individual takes time and coincides with interdependence (Simpson, 1990). It is much more likely for anxiety and avoidance to play a role in the quality of established romantic relationships than relationships with single individuals and their crushes. Impression management may also explain these findings. Individuals who are not in a relationship may disguise or hide any avoidant or anxious behaviors from potential partners to help them seem more attractive as partners. Coupled individuals who have been in a relationship may be less likely or less able to hide their attachment anxiety or avoidance from their partners.

Next, there were some significant main effects of SNS behaviors for relationship quality. First, private messaging on a daily basis was positively associated with daily relationship satisfaction with a crush. This finding can be explained by social penetration theory (Altman & Taylor, 1973). According to this theory, in order for relationships to become more intimate, individuals need to self-disclose more often and eventually on a deeper level. Individuals may use social media to increase opportunities for self-disclosure with their crushes, which might increase the likelihood of relationship formation. Second, posting photos of one's romantic relationship on average during the 10-day study was negatively associated with relationship satisfaction, whereas posting photos of romantic partners during the 10-day study was positively associated with relationship satisfaction. These contrary findings may depend on who is posting photos to social media. For instance, if the individual is posting a photo of the partner or of the couple, it may not be bad for the quality of the relationship, because they are the individuals intentionally sharing information of the relationship. But if the partner is the one who posts a

photo, and the individual does not like the photo or approve of the photo, this behavior may cause conflict in the relationship. This deduction is similar to studies on Facebook, which explain why an individuals' relationship posts on Facebook are associated with greater satisfaction (Saslow, Muise, Impett, & Dubin, 2013) and commitment (Toma & Choi, 2015), but partners' posts are associated with less satisfaction (Northrup & Smith, 2016) and commitment (Toma & Choi, 2015). Future studies should examine who is posting photos and what individuals' perceptions are of those photos being posted.

Although both attachment and social media behaviors contributed to relationship quality, the current study found that attachment style moderated the relationship between specific SNS behaviors and relationship quality. First, attachment anxiety influenced the association between daily relationship satisfaction and commenting on romantic partners' social media content. Individuals with low anxiety who reported low commenting conveyed high relationship satisfaction, whereas low anxious individuals who reported more commenting appear to have the lowest levels of satisfaction in their relationships. Additionally, individuals with high anxiety have relatively lower levels of relationship satisfaction regardless of the amount of comments they post on social media. There are some explanations for these findings. First, individuals with high anxiety might become anxious depending on the amount of comments posted. If there are too many comments, they may overthink why there are so many comments being made by their partner. If there are not enough comments being made on social media, anxious people may also overthink why their partner is not commenting or sharing information as much on social media. There is evidence that anxious individuals typically overanalyze information posted or shared on social media (Seidman, Langlais, & Havens, 2017). Individuals who are not as anxious may not overanalyze the amount of comments being posted on social media. Individuals who are not as

anxious may refrain from social media behaviors as opposed to individuals who are more anxious, as anxious individuals are more likely to seek affirmation of their relationship on social media (Seidman & Havens, 2013).

Another significant moderating effect was found between avoidance and commenting for relationship quality. Individuals who were more avoidant appeared more satisfied in their relationships when they reported less frequency commenting on romantic partners' social media content. This finding may occur because avoidant individuals are less likely to engage in relationship behaviors either online or offline (Rosiman, 2009; Rus & Tiemensma, 2017). Therefore, the behavior of commenting less on social media coincides with their attachment style. When participants who are not as avoidant comment more often on social media, their relationships seem less satisfying. Individuals who are not avoidant may be more satisfied in their relationships with this behavior as commenting may be a way to promote attachment via self-disclosure, which is beneficial for relationship satisfaction.

A third interaction was found between posting photos of the relationship and anxiety. People who posted more photos of their partner, particularly those who are anxious, reported increased levels of relationship satisfaction. In these instances, posting photos of one's romantic partner may exhibit pride in the relationship. Posting a picture of a partner may illustrate to one's social network that they are attracted to their partner, their partner is attractive, and they are happy in that relationship. This behavior may reinforce the idea that the relationship is good, which in turn reflects higher levels of relationship satisfaction. This behavior may also be explained by relationship-contingent self-esteem (RCSE; Seidman & Havens, 2013). Individuals who have high RCSE typically engage in more public social media behaviors, specifically posting pictures, to help boost their self-esteem with their relationships. Posting these pictures

not only shows pride in the relationship, but also ownership, both of which could result in boosts in relationship satisfaction.

Most of the findings for the interactions in this study were found for coupled participants rather than single participants. First, individuals who are not in relationships are less likely to engage in social media behaviors with a crush than a romantic couple. It is not as common for single people to talk to or post pictures publicly on social media, as these relationships are not formed, or they may still be getting acquainted to figure out relationship fit. Single individuals may be more likely to engage in private social media behaviors, such as private messaging, or even SnapChat, where these conversations are ephemeral. Coupled participants are more apt to post information on social media publicly, because these relationships are already established and public. Additionally, individuals who are in relationships may be more likely to show off these relationships, whereas single individuals may be more reluctant to share information regarding their relationship status, due to social stigma, or refrain from showing information with a crush, in the chance the relationship with a crush doesn't form, which could be viewed as embarrassing.

LIMITATIONS AND CONCLUSIONS

Although this study advances the literature, no studies are without limitations. First, there were sample limitations. The majority of participants were female, heterosexual, and college aged. Additionally, most participants were from the Midwest. A more diverse sample would have helped elucidate the findings in this study. However, this is one of the first studies that used a longitudinal approach in understanding the use of social media behaviors across multiple platforms. However, the information from this study cannot discern cause and effect. Therefore, more stringent approaches to analyzing longitudinal data are needed.

Overall, this study showed the effects of attachment behaviors for relationship development and maintenance via social media. The results of this study demonstrated that attachment plays a significant role in established relationships and a minor role with single participants and their crushes. For those in relationships, anxiety and avoidance may hinder relationship quality when it comes to certain social media behaviors. Understanding attachment style and social media use helps to promote healthy romantic development.

REFERENCES

- Altman, I., & Taylor, D. A. (1973). *Social penetration: The development of interpersonal relationships*. Oxford, England: Holt, Rinehart & Winston.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*, 226-244.
doi:10.1037/0022-3514.61.2.226
- Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment: Do they converge?. In J. A. Simpson, W. S. Rholes, J. A. Simpson, W. S. Rholes (Eds.) , *Attachment theory and close relationships* (pp. 25-45). New York, NY, US: Guilford Press.
- Billedo, C. J., Kerkhof, P., & Finkenauer, C. (2015). The use of social networking sites for relationship maintenance in long-distance and geographically close romantic relationships. *Cyberpsychology, Behavior, and Social Networking*, *18*, 152-157.
doi:10.1089/cyber.2014.0469
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult romantic attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York: Guilford Press.
- Burke, M., & Kraut, R. E. (2014). Growing closer on Facebook: Changes in tie strength through social network site use. CHI 2014 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 4187-4196. doi: 10.1145/2556288.2557094
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology*, *78*, 1053-1073. doi:10.1037/0022-3514.78.6.1053

- Emery, L. F., Muise, A., Dix, E. L., & Le, B. (2014). Can you tell that I'm in a relationship? Attachment and relationship visibility on Facebook. *Personality and Social Psychology Bulletin, 40*, 1466-1479. doi: 10.1177/0146167214549944
- Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology, 58*, 281-291. doi:10.1037/0022-3514.58.2.281
- Fletcher, G. O., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin, 26*, 340-354. doi:10.1177/0146167200265007
- Fleuriet, C., Cole, M., & Guerrero, L. K. (2014). Exploring Facebook: Attachment style and nonverbal message characteristics as predictors of anticipated emotional reactions to Facebook postings. *Journal of Nonverbal Behavior, 38*, 429-450. doi:10.1007/s10919-014-0189-x
- Fox, J., & Warber, K. M. (2014). Social networking sites in romantic relationships: Attachment, uncertainty, and partner surveillance on Facebook. *Cyberpsychology, Behavior, and Social Networking, 17*, 3-7. doi:10.1089/cyber.2012.0667
- Fox, J., Warber, K. M., & Makstaller, D. C. (2013). The role of Facebook in romantic relationship development: An exploration of Knapp's relational stage model. *Journal of Social and Personal Relationships, 30*, 771-794. doi: 10.1177/0265407512468370
- Greenwood, S., Perrin, A., & Duggan, M. (2016, November). Social media update 2016. *Pew Research Center*. Retrieved May 8, 2017, from <http://www.pewinternet.org/2016/11/11/social-media-update-2016/>

- Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, *50*, 93-98. doi: 10.2307/352430
- Kalpidou, M., Costin, D., & Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *Cyberpsychology, Behavior, and Social Networking*, *14*, 183-189. doi:10.1089/cyber.2010.0061
- LeFebvre, L., Blackburn, K., & Brody, N. (2015). Navigating romantic relationships on Facebook: Extending the relationship dissolution model to social networking environments. *Journal of Social and Personal Relationships*, *32*, 78-98. doi: 10.1177/0265407514524848
- Lenhart, A. (2015, April 5). Teens, social media, and technology overview 2015. *Pew Research Center*. Retrieved from <http://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/>
- Lukacs, V., & Quan-Haase, A. (2015). Romantic breakups on Facebook: New scales for studying post-breakup behaviors, digital distress, and surveillance. *Information, Communication & Society*, *18*, 492-508. doi: 10.1080/1369118X.2015.1008540
- Mansson, D. H., & Meyers, S. A. (2011). An initial examination of college students' expressions of affection through Facebook. *Southern Communication Journal*, *76*, 155-168. doi: 10.1080/10417940903317710
- Marshall, T. C., Bejanyan, K., Di Castro, G., & Lee, R. A. (2013). Attachment styles as predictors of Facebook-related jealousy and surveillance in romantic relationships. *Personal Relationships*, *20*, 1-22. doi: 10.1111/j.1475-6811.2011.01393.x

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted:

Does Facebook bring out the green-eyed monster of jealousy?. *Cyberpsychology & Behavior*, *12*, 441-444. doi:10.1089/cpb.2008.0263.

Muise, A., Christofides, E., & Desmarais, S. (2014). 'Creeping' or just information seeking?

Gender differences in partner monitoring in response to jealousy on Facebook. *Personal Relationships*, *21*, 35-50. doi:10.1111/pere.12014

Northrup, J., & Smith, J. (2016). Effects of Facebook maintenance behaviors on partners'

experience of love. *Contemporary Family Therapy*, *38*, 245-253. doi: 10.1007/s10591-016-9379-5

Pew Research Center. (2017, January 12). Social media fate sheet. Retrieved from

<http://www.pewinternet.org/fact-sheet/social-media/>

Roisman, G. I. (2009). Adult attachment: Toward a rapprochement of methodological cultures.

Current Directions in Psychological Science, *18*, 122-126. doi:10.1111/j.1467-8721.2009.01621.x

Rus, H. M., & Tiemensma, J. (2017). "It's complicated." A systematic review of associations

between social network site use and romantic relationships. *Computers in Human Behavior*, *75*, 684-703. doi: 10.1016/j.chb.2017.06.004

Saslow, L. R., Muise, A., Impett, E. A., & Dubin, M. (2013). Can you see how happy we are?

Facebook images and relationship satisfaction. *Social Psychological and Personality Science*, *4*, 411-418. doi: 10.1177/1948550612460059

Seidman, G. & Havens, A. L. (February, 2014). Relationship-Contingent Self Esteem and

Abandonment Anxiety Predict Facebook Activity. Poster presented at the Society for Personality and Social Psychology Annual Conference, Austin, TX.

- Seidman, G., Langlais, M. R., & Havens, A. (2017). Romantic relationship-oriented Facebook activities and the satisfaction of belonging needs. *Psychology of Popular Media Culture*, doi: 10.1037/ppm0000165
- Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology*, 59, 971-980. doi:10.1037/0022-3514.59.5.971
- Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and The Family*, 54, 595-608. doi:10.2307/353245
- Tokunaga, R. S. (2011). Social networking site or social surveillance site? Understanding the use of interpersonal electronic surveillance in romantic relationships. *Computers in Human Behavior*, 27, 705-713. doi: 10.1016/j.chb.2010.08.014
- Toma, C. L., & Choi, M. (2015). The couple who Facebooks together, stays together: Facebook self-presentation and relationship longevity among college-aged dating couples. *Cyberpsychology, Behavior, and Social Networking*, 18, 367-372. doi: doi:10.1089/cyber.2015.0060
- Utz, S., Muscanell, N., & Khalid, C. (2015). Snapchat elicits more jealousy than Facebook: A comparison of Snapchat and Facebook use. *Cyberpsychology, Behavior, and Social Networking*, 18, 141-146. doi: 10.1089/cyber.2014.0479

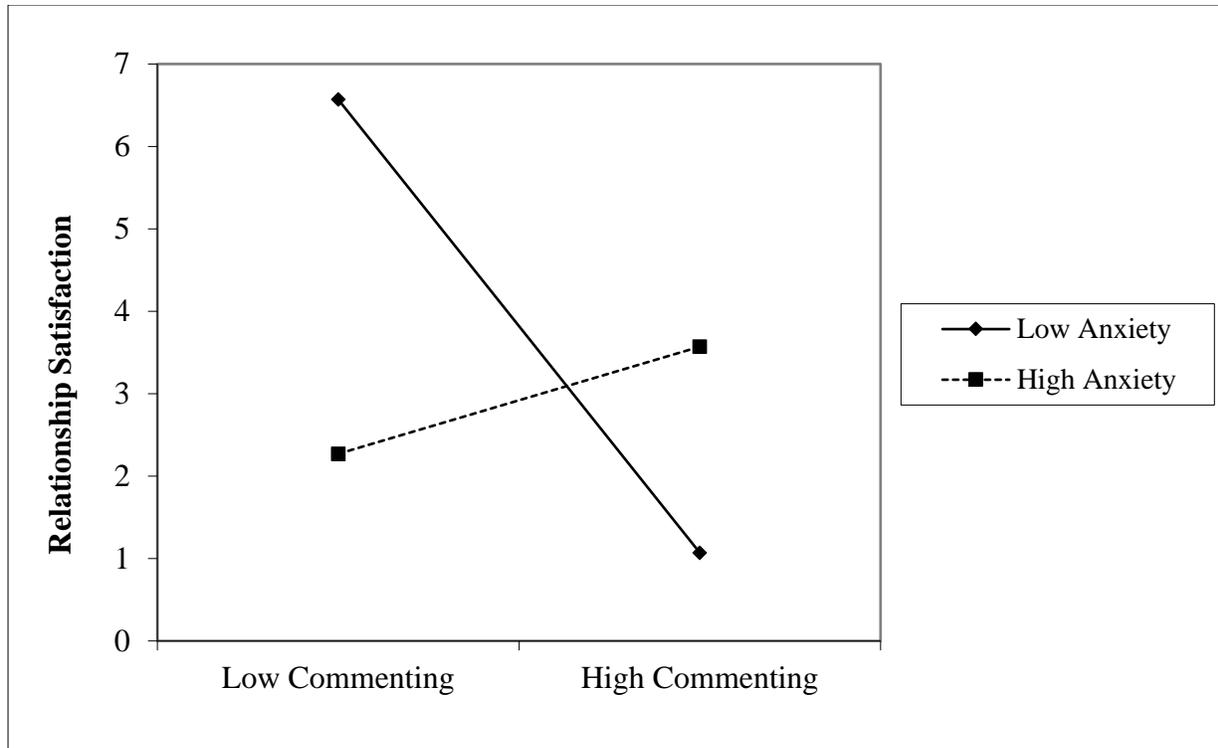


Figure 1. Relationship satisfaction as predicted by the interaction between anxiety and frequency of commenting on romantic partners' social media content.

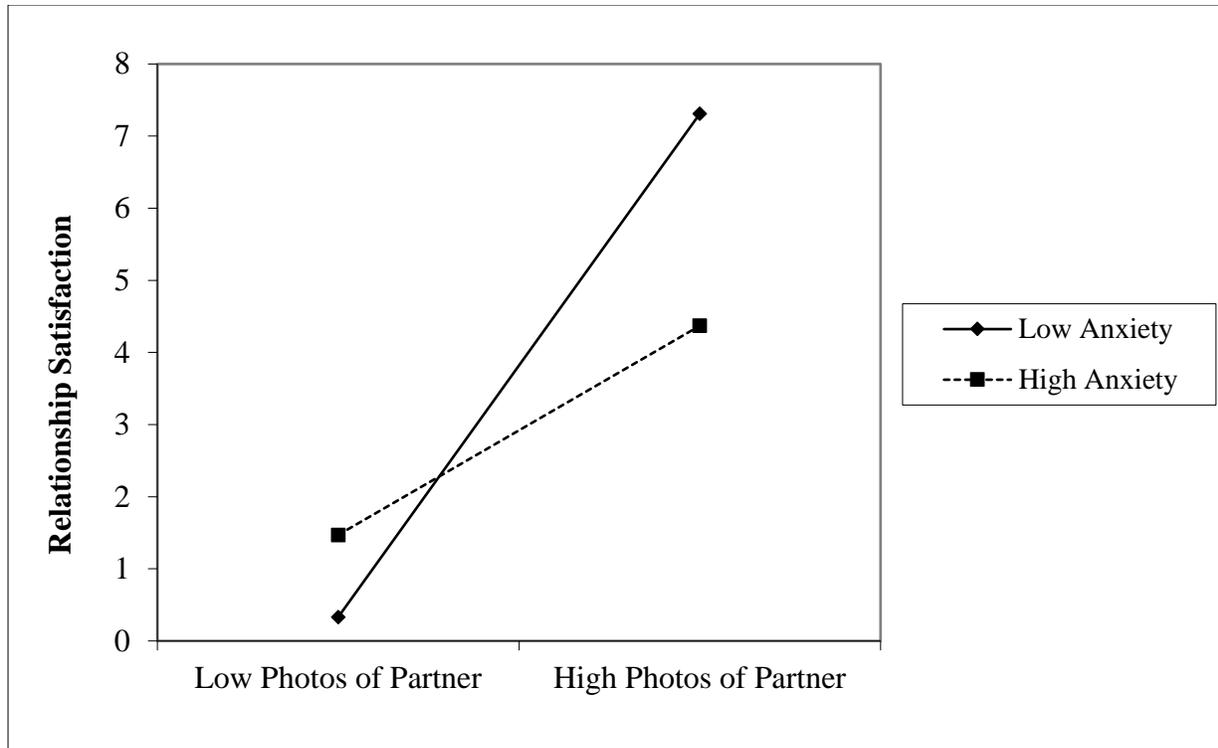


Figure 2. Relationship satisfaction as predicted by the interaction between anxiety and frequency of posting photos of romantic partner on social media.

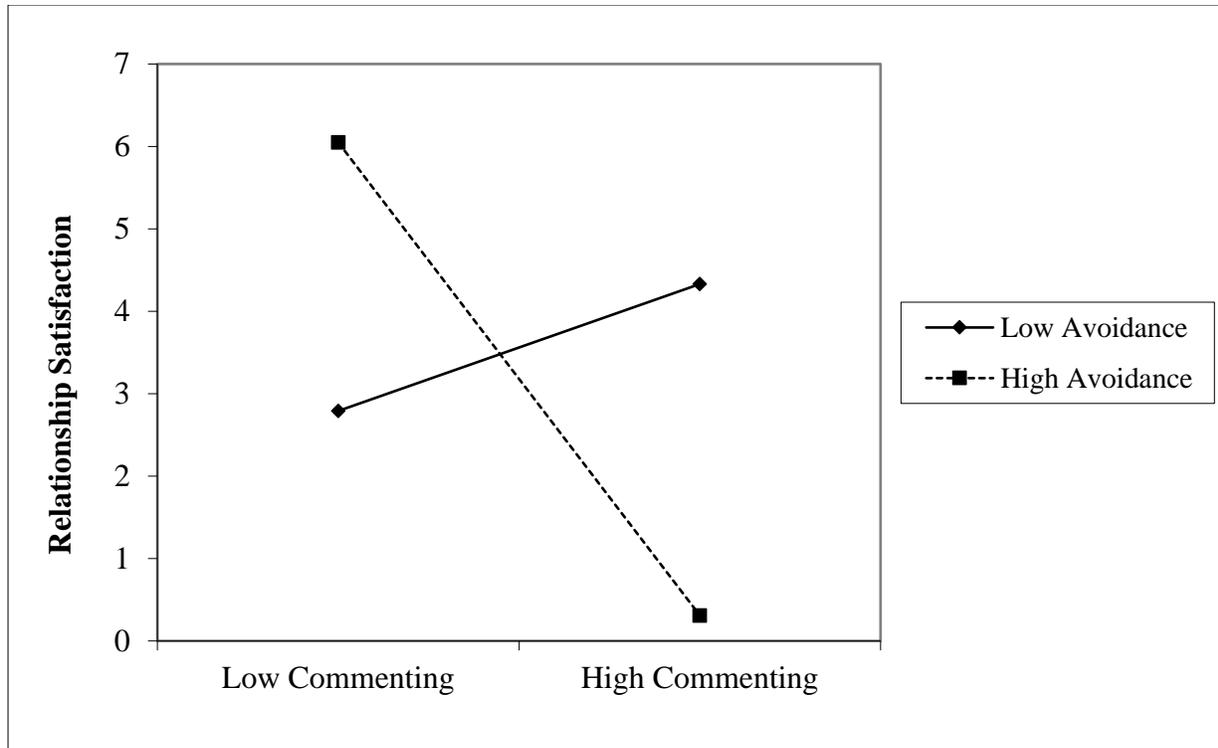


Figure 2. Relationship satisfaction as predicted by the interaction between avoidance and frequency of commenting on romantic partners' social media content.

Table 1. Descriptive statistics for study sample.

Study Variable		Men ($n = 24$)	Women ($n = 159$)	Total ($N = 183$)	$F (2,182)$
Age		19.68 (1.67)	19.45 (1.77)	19.48 (1.75)	.20
Ethnicity	White/Caucasian	17 (70.8)	125 (78.6)	142 (77.6)	
	Black/African-American	4 (16.6)	17 (10.7)	21 (11.5)	
	Asian or Pacific Islander	1 (4.2)	4 (2.5)	5 (2.7)	
	Hispanic	0 (0.0)	8 (5.0)	8 (4.4)	
	American Indian	1 (4.2)	1 (0.6)	2 (1.0)	
	Other	1 (4.2)	4 (2.5)	5 (2.7)	
Education	Freshman	13 (54.2)	81 (50.9)	94 (51.4)	
	Sophomore	5 (20.8)	28 (17.6)	33 (18.0)	
	Junior	4 (16.6)	27 (17.0)	31 (16.9)	
	Senior	2 (8.3)	21 (13.2)	23 (12.6)	
	Five or more years	0 (0.0)	2 (1.3)	2 (1.0)	
Sexual Orientation	Heterosexual	21 (87.5)	139 (87.4)	160 (87.4)	
	Homosexual	1 (4.2)	1 (0.6)	2 (1.0)	
	Other	2 (8.3)	19 (11.9)	21 (11.5)	
Relationship Status	Single	10 (41.7)	68 (42.8)	78 (42.6)	
	Casually dating	4 (16.6)	16 (10.1)	20 (12.6)	
	Seriously dating	10 (41.7)	74 (46.5)	84 (45.9)	
	Married	0 (0.0)	1 (0.6)	1 (0.5)	
<i>Attachment Behaviors^a</i>					
Anxiety		3.88 (1.04)	3.81 (1.16)	3.82 (1.14)	.43
Avoidance		2.69 (1.09)	2.78 (1.11)	2.78 (1.11)	1.05
<i>Social Media Behaviors^b</i>					
Minutes on Facebook		18.44 (18.94)	30.39 (44.20)	28.88 (41.98)	.81
Minutes on SnapChat		25.36 (24.14)	43.62 (98.66)	41.16 (92.75)	.47
Minutes on Instagram		21.11 (32.57)	20.68 (32.50)	20.62 (32.37)	.20
Minutes on Twitter		13.28 (19.82)	18.72 (43.29)	17.96 (41.05)	.26

Monitoring	31.74 (47.34)	33.17 (52.63)	32.89 (51.76)	.08
Commenting	.46 (.75)	.54 (.83)	.53 (.82)	.09
Updating	.39 (1.12)	.34 (.71)	.35 (.76)	.04
Private Messaging	19.37 (33.14)	24.16 (87.62)	23.46 (82.64)	.06
Photos	.34 (.72)	.54 (.88)	.51 (.86)	.51

Note: Ethnicity, education, sexual orientation, and relationship status are presented as counts with column percentages in parentheses; all other information is presented as averages with standard deviation in parentheses.

Table 2. Moderation analyses examining attachment and social media behaviors for relationship quality with romantic partner ($N = 105$).

Predictor Variables	Step 2	Step 3	Step 2	Step 3
	Relationship Satisfaction		Commitment	
Intercept	3.79 (1.12)	3.37 (1.15)	.06 (2.31)	-.08 (2.39)
Anxiety	-.19 (.06)	-.45 (.15)	.03 (.13)	.08 (.31)
Avoidance	-.48 (.07)***	-.19 (.17)	-.54 (.15)***	-.55 (.36)
Monitoring	-.07 (.05)	-.17 (.07)	.27 (.11)*	.20 (.15)
Commenting	.28 (.07)	-1.05 (.26)	.04 (.15)	-1.27 (.53)
Updating	-.11 (.06)	1.47 (.43)	.07 (.11)	.39 (.89)
Private Messaging	.01 (.07)	.35 (.17)	.11 (.15)	.27 (.35)
Photo of Relationship	-.80 (.32)	-2.42 (.46)*	1.32 (.67)	1.32 (.97)
Photos of Partner	.70 (.32)	2.47 (.45)*	-1.38 (.67)	-.63 (.94)
<i>Moderation Variables</i>				
Anxiety x Monitoring		-.23 (.28)		.10 (.57)
Anxiety x Commenting		1.70 (.28)*		.86 (.58)
Anxiety x Updating		-2.67 (.50)		-1.21 (1.04)
Anxiety x Private Messaging		-.10 (.38)		.07 (.80)
Anxiety x Photos of Relationship		-.08 (.40)		.31 (.84)
Anxiety x Photos of Partner		-1.02 (.44)*		-.94 (.92)
Avoidance x Monitoring		.10 (.25)		-.07 (.52)
Avoidance x Commenting		-1.82 (.28)**		-1.12 (.60)
Avoidance x Updating		1.07 (.65)		1.22 (1.35)
Avoidance x Private Messaging		.41 (.44)		.07 (.93)
Avoidance x Photos of Relationship		-.10 (.68)		.33 (1.41)
Avoidance x Photos of Partner		1.31 (.76)		-.01 (.58)
Change in R^2	.408***	.111	.276**	.123

Note: Variables are standardized beta coefficients and presented as B(SD).

*** $p < .001$; ** $p < .01$; * $p < .05$.

Table 3. Moderation analyses examining attachment and social media behaviors for relationship quality with romantic crush ($N = 78$).

<i>Predictor Variables</i>	Step 2	Step 3	Step 2	Step 3
	Relationship Satisfaction		Closeness	
Anxiety	.00 (.31)	-.02 (1.73)	.05 (.31)	-.62 (1.63)
Avoidance	.01 (.37)	-.61 (.23)	.09 (.36)	-.35 (1.21)
Monitoring	-.31 (.35)	-.73 (.68)	-.08 (.34)	-.54 (.64)
Commenting	.14 (.27)	2.38 (5.78)	.24 (.27)	5.07 (5.45)
Updating	.22 (.27)	-.01 (1.46)	.16 (.26)	-.81 (1.38)
Private Messaging	.33 (.23)*	1.35 (1.39)	.27 (.23)	1.71 (1.31)
Photo of Relationship	.21 (.33)	.44 (.54)	.14 (.33)	.09 (.51)
Photos of Crush	.19 (.30)	-.02 (1.34)	.35 (.29)	.27 (1.27)
<i>Moderation Variables</i>				
Anxiety x Monitoring		.08 (.61)		.32 (.58)
Anxiety x Commenting		-.87 (7.26)		-6.50 (6.84)
Anxiety x Updating		.65 (1.50)		.93 (1.41)
Anxiety x Private Messaging		.52 (1.14)		.84 (1.08)
Anxiety x Photos of Relationship		-.69 (2.51)		-.06 (2.37)
Anxiety x Photos of Crush		-.48 (.65)		-.67 (.61)
Avoidance x Monitoring		-.41 (.89)		.05 (.84)
Avoidance x Commenting		-.93 (2.97)		1.77 (2.80)
Avoidance x Updating		---		---
Avoidance x Private Messaging		-1.56 (3.61)		-2.23 (3.12)
Avoidance x Photos of Relationship		.79 (1.65)		.37 (1.56)
Avoidance x Photos of Crush		---		---
Change in R^2	.274	.186	.334*	.228

Note: Variables are standardized beta coefficients and presented as B(SD). For models 2 and 4, there was little variability with the number of updates and photos posted, so the moderating variables in these analyses were not presented.

* $p < .05$.