Are Online Comparisons Damaging our In-Person Connections?

Effects of Social Media Use on Romantic Relationships

by

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ABSTRACT

Social media has been extensively researched, and its effects on well-being are well established. What is less studied, however, is how social media affects romantic relationships specifically. The few studies that have researched this have found mixed results. Some researchers have found social media to have a positive influence on relationship outcomes, while other have found social media to have a negative influence. In an attempt to reconcile these discrepancies, the current thesis study explored possible mediators between social media use and relationship health outcomes which, to my knowledge, has not been investigated in previous literature. Three moderators were explored: type of social media use (active use versus passive use), relationship-contingent self-esteem, and social comparison orientation. The baseline portion of the study had 547 individuals, recruited from Arizona State University's SONA system as well as Amazon's Mechanical Turk, who were in a romantic relationship for at least three months; the follow-up portion of the study had 181 participants. Results suggest that women who passively use social media exhibit a negative association between hours per day of social media use and baseline relationship satisfaction. Men who passively use social media exhibited a negative association between hours per day of social media use and follow-up relationship satisfaction, as well as a negative association with baseline commitment. While relationship-contingent self-esteem did not moderate the association between hours per day of social media use and relationship health, it was positively related to both men and women's baseline relationship satisfaction and baseline commitment. Social comparison orientation (SCO) produced minimal results; women low on SCO exhibited a negative association between social media use and baseline

relationship satisfaction, and higher SCO for men was associated with lower baseline commitment. Finally, exploratory post-hoc mediation models revealed that relationship comparisons mediated the association between hours per day of social media use and baseline relationship, as well as baseline commitment, for both men and women. Previous research supports the findings regarding passive social media use, while the findings regarding relationship-contingent self-esteem and relationship comparisons add new findings to the romantic relationship literature.

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Introduction

According to Statista, in 2017, 81% of Americans had social media profiles. There are 1.4 billion daily active users on Facebook, 500 million on Instagram, 187 million on Snapchat and 100 million on Twitter. It is undeniable that social media has become a part of many people's everyday lives. Because of the ubiquitous nature of social media in our lives, researchers have begun to examine its impact on various aspects of people's lives. Most research has focused on the largest social media platform, Facebook, and how it affects well-being (e.g., Nabi, Prestin, & So, 2013; Frison & Eggermont, 2016; Arad, Barzilay, & Perchick, 2017). However, there is a lack of research investigating how social media affects romantic relationships. The current thesis investigates why some individuals experience positive effects of social media on their relationships while others experience negative effects. The thesis focuses on three main factors that may help explain these differences: type of social media use (passive versus active use), social comparison orientation, and relationship-contingent self-esteem.

Effects of Social Media on Well-Being

Social media is likely to have large impacts on everyday life due to its omnipresence. Research in this area has grown exponentially in the past decade, with most research finding social media has negative effects on well-being. For example, Frison and Eggermont (2016) found negative comparisons on Facebook predicted decreased life satisfaction over time; moreover, this relationship was bidirectional as lower scores on life satisfaction also predicted increases in negative comparison on Facebook. Similarly, Arad, Barzilay and Perchich (2017) found Facebook usage was related to users' increased engagement in social comparison, which consequently

decreased their happiness. In a study on Instagram use, Lup, Trub, and Rosenthal (2015) found greater Instagram use was marginally associated with more depressive symptoms. On the other hand, Nabi, Prestin and So (2013) found number of Facebook friends was associated with stronger perceptions of social support, which then was associated with lower stress levels, less physical illness, and greater well-being. Thus, it appears that social media may be a double-edged sword with negative and positive connections to well-being; yet, there is little, if any, research on what might explain these contradictory results.

One potential way to understand the inconsistent findings is to consider the mode of social media engagement. The two most common forms of engagement researchers analyze are *active use* and *passive use* (i.e., lurking). Active social media use involves posting content, sharing information and interacting with others, whereas passive use involves browsing content posted by others without participation (Chen, Lu, Chau, & Gupta, 2014). Wang, Gaskin, Rost and Gentile (2017) conducted a two-wave study to examine effects of passive and active social networking site (SNS) use on well-being. Although active SNS use was not related to well-being over time, higher passive SNS use predicted decreased subjective well-being over time. Moreover, low subjective well-being predicted an increase in passive SNS use over time. Similarly, Chen, Fan, Liu, Zhou and Xie (2016) found passive SNS use to be negatively correlated with self-esteem and subjective well-being. They, however, did not examine active SNS use. In another study, Shaw, Timpano, Tran and Joormann (2015) compared active versus passive Facebook use on social anxiety symptoms and found only passive Facebook use was associated with greater social anxiety symptoms. Finally, in a controlled laboratory study,

Verduyn and colleagues (2015) randomly assigned participants to an active or passive Facebook use group. Those who were cued to passively use Facebook showed declines in affective well-being immediately following the experiment, whereas those cued to actively use Facebook did not experience any changes in affective well-being. These studies, as well as many others, strongly suggest that passive use may be harmful to an individual's well-being while active use is not. One reason why passive use might be more strongly related to negative outcomes is that those who simply view content are more likely to engage in social comparison. Indeed, whether researchers focus on active or passive use, most acknowledge the role of social comparison as an explanatory variable between social media use and well-being.

Social Comparison Orientation

Humans are born with a natural tendency to compare themselves to one another. These comparisons allow us to gauge how we are doing relative to others in our environment, whether that be better or worse. Festinger (1954) argued that people make upward (i.e. compare themselves to someone "better off"), downward (i.e. compare themselves to someone "worse off"), or similar comparisons (compare themselves to someone similar to themselves). Although all people make social comparisons, some people may compare themselves to others more frequently. These individual differences in the frequency with which people compare themselves to others is termed *social comparison orientation* (Gibbons & Buunk, 1999). Gibbons and Buunk (1999) found social comparison orientation (SCO) to be positively related to negative affectivity, neuroticism, depression, public self-consciousness, and perceived stress, and negatively related to social desirability.

Social media by its very nature involves social comparison. As such, a large body of research has examined social media use and social comparison orientation (SCO). Vogel, Rose, Roberts and Eckles (2014) explored the relationship between SCO, Facebook use and various psychological outcomes. In their first study, Facebook use was negatively correlated with trait self-esteem and positively correlated with making social comparisons; participants reported making, on average, more upward comparisons than downward comparisons. Finally, trait self-esteem was negatively correlated to both upward and downward comparisons. Vogel and colleagues (2015) published another article that further explored the relationship between SCO and Facebook use. Not surprisingly, those high in SCO used Facebook more frequently than those low in SCO. They, then, used an experimental approach where participants were randomly assigned to three different conditions. The first condition (Facebook experimental) had participants view an acquaintance's profile on Facebook for five minutes, the second condition (Facebook control) had participants view their own Facebook profiles for five minutes, and the third condition (Non-Facebook control) had participants complete an unrelated task on the Internet for five minutes. After the five minutes, participants completed the survey. The results showed an interaction between level of SCO and condition on three different outcomes. Those in the Facebook experimental condition who were also high in SCO reported lower trait self-perceptions, lower self-esteem, and higher negative affect than those low in SCO in both the Facebook control and the Non-Facebook control conditions.

Recently, researchers have begun to examine the role of SCO in social media use and well-being. Wang, Wang, Gaskin and Hawk (2017) found both upward social

comparison and self-esteem mediated the relationship between social media use and subjective well-being. They also found SCO strengthened the association between passive social media use and participants' upward social comparison. Thus, research has clearly established a link between SCO, social media use, and well-being; but, what is less clear is the role of social media use and SCO on relationship outcomes.

Social Media and Romantic Relationships

The presentation and display of romantic relationships on social media constitutes a significant focus for many individuals' social media accounts. But, is social media good or bad for relationships? Valenzuela, Halpern and Katz (2014) reported that, by state within the United States, Facebook penetration is associated with increasing divorce rates, and the use of social networking sites is negatively correlated with marriage quality. In a 2-week diary study of social media use and relationship functioning, Emery, Muise, Dix and Le (2014) asked participants how much information they shared about their relationship or their partner on Facebook; how insecure they felt about their partners' feelings for them; and, number of minutes they spent on Facebook each day. Participants were more likely to post about their partner on days when they felt more insecure about their partner's feelings for them. Conversely, Seidman, Langlais and Havens (2017) found relationship satisfaction was positively associated with displaying one's relationship on Facebook. However, they also found that displaying *more* affection on Facebook than offline was negatively related to relationship satisfaction. Yet, they also found those low in relationship satisfaction benefitted from excessive displays of affection on social media. Like the findings on social media and well-being, the results for social media and romantic relationships suggest both positive and negative effects.

As with well-being, research may benefit from examining social comparison (in the context of relationships) to understand these conflicting results.

Relationship Social Comparison

Just as comparing oneself to others in schoolwork or on job performance, it is also a natural human reflex to compare our romantic relationships to other people's relationships – regardless of whether we personally know the other couple or simply read about them in magazines. Some of the first studies to look at how people compared their relationships to others were done by Buunk and various colleagues. Buunk, Oldersma and de Dreu (2001) had participants make downward comparisons about either themselves or their partners by asking how they were better partners than most others/how their partners were better than most others. They also had a no-comparison group where they asked participants to list how they are a good partner or how their partner is a good partner. Altogether, this totaled to four different conditions: self-comparison, partner comparison, self no-comparison, partner no-comparison. The results showed that those in the comparison conditions reported higher relationship satisfaction than those in the no-comparison conditions, regardless of whether they reported about themselves or their partners. In a later study, Buunk and Ybema (2003) investigated specifically how women were affected by making comparisons about their marriages to other women's marriages. They manipulated the direction of comparisons by providing participants with either a positive or negative description of another woman's marriage. The upward comparison condition emphasized positive aspects of the target woman's marriage such as how the couple still found each other attractive and how strong their bond was. The downward comparison condition emphasized negative aspects of the target woman's marriage such

as how the couple did not find each other attractive anymore and how weak their bond was. They found that participants in the downward comparison condition had more positive relationship evaluations than those in the upward comparison condition. Surprisingly, research on *relationship social comparison* is scarce. In 2008, Smith LeBeau and Buckingham ran three separate studies on RSC to further understand it. In their first study, RSC was positively associated with anxious attachment, avoidant attachment, and relationship insecurity, as well as negatively associated with self-esteem. In their second study, RSC was positively associated with SCO, quality of alternative partners (e.g. rating others as more appealing than one's partner) and investment in the relationship, and negatively associated with relationship satisfaction and intimacy. In their third study, RSC predicted less relationship satisfaction and greater relationship insecurity over time. Furthermore, relationship insecurity mediated the association between RSC and relationship satisfaction; in other words, RSC leads individuals to feel more insecure about their relationship which, in turn, decreases their relationship satisfaction.

Some researchers have suggested that how an individual interprets a comparison determines how it affects them. Morry, Sucharyna and Petty (2018) found RSC was negatively correlated with both negative affect and relationship satisfaction, which seem to be contradictory results. They also examined how different RSC interpretations may lead to different outcomes. They determined there to be three kinds of interpretations: *negative* (e.g. "I feel hopeless about my relationship."), *positive downward* (e.g. "We're not as bad off as them.") and *positive upward* (e.g. "I am inspired to do better."). Negative interpretations were negatively related to negative affect, relationship

satisfaction and commitment and positively associated with neglect shown to partner. Positive downward interpretations were positively related to loyalty to partner. Lastly, positive upward interpretations were negatively related to negative affect. Combined, these findings suggest that not only is the frequency of relationship comparisons related to relationship outcomes and well-being, but more importantly how an individual interprets those comparisons. Yet, there is no research, to my knowledge, that has examined the role of RSC in the link between social media use and relationship outcomes.

Role of Self-Esteem

Relationship social comparison interpretations may also have a unique relationship with self-esteem as it has been shown that those with low self-esteem make more social comparisons than others (Gibbons & Buunk, 1999). Moreover, self-esteem may be a predictor of the types of interpretations people make, while at the same time an individual's interpretation can influence their self-esteem. Additionally, self-esteem seems to play a significant role in social media use and well-being. In general, self-esteem has consistently been found to predict psychological well-being (Baumeister, Campbell, Krueger, & Vohs, 2003). More recently, self-esteem and social media use have been explored, with most research suggesting social media use is negatively related to self-esteem, although the direction of influence remains unclear (Vogel, Rose, Roberts, & Eckles, 2014; Woods & Scott, 2016). It is necessary to further examine these associations and investigate specific types of self-esteem involved in this association. While there are a variety of types of self-esteem, for the purposes of the proposed thesis I

will be narrowing my focus to two types of self-esteem that are particularly salient to relationship outcomes: relationship-contingent self-esteem and social self-esteem.

Relationship-contingent self-esteem (RCSE) is a fairly new term in relationship research. Knee, Canevello, Bush and Cook (2008) define RCSE as an unhealthy form of self-esteem, where an individual's self-worth is dependent upon their romantic relationship. They argue that those who are high in RCSE base their self-esteem entirely on the how their romantic relationship is going. When something negative happens within the relationship, those high in RCSE react strongly because they feel a strong tie between this negative event and their own self-worth (Knee, Canevello & Bush, 2008). Knee and colleagues conducted four studies to establish convergent, discriminant, incremental, and predictive validity for their measure of RCSE. In their first study, RCSE was related to conceptually similar variables such as general contingent self-esteem, contingent self-worth, lower trait self-esteem, self-consciousness, and social anxiety. RCSE was only weakly associated with relationship satisfaction, closeness, and commitment; it was also unrelated to sex or relationship length. Therefore, Knee and colleagues suggest RCSE and relationship functioning are related but distinct constructs. In their second study, they examined whether RCSE moderated the degree to which one's state self-esteem varied by the valence of relationship events over a 14-day period. Their results showed a stronger association between state self-esteem and relationship events for those higher in RCSE than those low in RCSE. Specifically, negative events predicted lower levels of self-esteem for those high in RCSE. In the third study, when negative relationships events occurred, people high in RCSE tended to experience more negative emotions than those low in RCSE. Finally, in their fourth study, when both partners were

high in RCSE, they reported higher levels of commitment than those partners who both had low levels of RCSE; however, there was no difference in satisfaction or closeness. Other researchers have examined how different levels of RCSE relate to other outcomes, such as drinking habits (Rodriguez, Knee, & Neighbors, 2014), mortality salience (Cox & Arndt, 2012), and fear of being single (Spielmann, MacDonald, Maxwell, Joel, & Peragine, 2013). The only study to date that has examined the relation between RCSE and social media use found that those high in RCSE were more likely to post about their relationship on Facebook (Seidman & Havens, 2014); however, those individuals were also more likely to monitor their partner's activities online. Some researchers have speculated that these individuals feel the need to reassure themselves and others that their relationship is going okay, while other researchers believe that these individuals are genuinely happy in their relationship and want to share their happiness with others. The results seem to indicate that RCSE may play a role in the association between social media use and relationship outcomes.

Another type of self-esteem that may be relevant to social media use is *social self-esteem.* Social self-esteem has been defined as feelings about the self within a variety of social situations (Lawson, Marshall, & McGrath, 1979). Social self-esteem is especially important during adolescence, because it helps adolescents develop personal, intimate and professional relationships (Damon & Hart, 1988). Low social self-esteem can lead to anxiety or depression, poor social adjustment and lower academic achievement (Gorbett & Kruczek, 2008). The inclusion of social self-esteem in studies looking social media use is rare; in fact, I have only been able to locate a couple studies. In one study, Valkenburg, Peter, and Schouten (2006) asked Dutch adolescents to rank the tone of reactions to their

Facebook profiles from always negative to always positive. Positive feedback was related to higher levels of social self-esteem, while negative feedback was related to lower levels of social self-esteem. In a more recent study, Valkenburg and colleagues (2017) examined how adolescent SNS use was related to social self-esteem over the course of three years. SNS use and social self-esteem were consistently positively related; but, only social self-esteem predicted SNS use in later years – not the reverse. No studies, to my knowledge, have examined the role of social self-esteem in social media use and relationship outcomes.

To conclude, research is extremely limited regarding RCSE and social self-esteem in general, and specifically, research is needed on how these two constructs are related to social media use and relationship outcomes. With respect to RCSE, Knee, Canevello and Bush's (2008) findings, RCSE appears to be a distinct form of self-esteem. However, only one study has examined its relation to social media use. In addition, the existing research suggests there is an association between social self-esteem and social media use although results are mixed. Further research is needed to examine how these two forms of self-esteem may play a role in the association between social media use and relationship outcomes.

Current Thesis Study

Social media is a double-edged sword; it keeps us in touch with our social network but also sets us up for potentially damaging social comparisons. The current thesis explores this idea within the context of romantic relationships. Research has shown that social media can have both positive and negative effects on both well-being and romantic relationship health, but there is limited research on why this is. The aim of this thesis is to

identify factors that influence the association between social media use and relationship health measured through relationship satisfaction and commitment. First, I predict that type of social media use will moderate the association between frequency of social media use and relationship health. More specifically, I believe that more passive social media use will lead to a negative association between frequency of social media use and relationship health, while active use will have either no association or a positive association (*Hypothesis 1*). I also predict that RCSE will act as a moderator in the association between social media use and relationship health (*Hypothesis 2*), although the direction of influence is unclear. There is not enough evidence to make a more specific prediction regarding RCSE because there are researchers who argue social media benefits individuals high on RCSE, as well as those who argue that it is harmful for them. Next, I predict that SCO will act as a moderator between frequency of social media use and relationship health such that those high on SCO will demonstrate a negative association between the two (*Hypothesis 3*). Finally, I will examine whether there are gender differences in the models. Although it's been shown that, generally, more women use social media than men (Pew Research Center, 2017), the literature has shown mixed results regarding gender's role in social media and romantic relationships (Tokunaga, 2011; Utz & Beukeboom, 2011; Fox & Warber, 2014). As a result, these gender analyses will be exploratory (*Research Question).*

Method

Sample

A power analysis was conducted using G*Power (Faul, Erdfelder, Buchner, & Lang, 2008) to determine how many participants were needed for the study. A meta-

analysis conducted by Richard, Bond Jr., and Stokes-Zoota (2003) found that the average effect size in social psychology was r = .21, which in general is considered a small effect. Therefore, I conducted a linear regression power analysis with the effect size (f^2) set to 0.02, alpha to 0.05, power to .80 and entered two predictors. The results of the power analysis showed that I would need to collect data on at least 485 participants to detect an effect (f^2) of at least 0.02.

After data cleaning, there were 547 eligible participants at baseline and 181 participants at the one-month follow-up (see Table 1 for sample demographics). Participants consisted of those in romantic relationships for at least 3 months, and were either dating (46.4%), cohabitating (14.4%) or married (39.1%). A large majority of the sample had been with their significant other between 3 months and 2 years (46.4%). All participants were English-speaking, at least 18 years old and in a monogamous relationship. Participants were recruited through ASU's SONA system and Amazon's Mechanical Turk. The average age of the sample was 28 years old (SD = 9.17), and almost half of participants had a college degree (48.7%). Most of the participants were White (52.5%) or Asian (20.9%) and reported being currently employed (83.9%). At the one-month follow-up, approximately 9% of the 181 participants that completed it had broken up with their significant other. Results from independent sample t-tests revealed those who completed the follow-up significantly differed from those who did not on the following variables: relationship status, relationship length, age, education, race, sexual orientation, general self-esteem, and baseline relationship satisfaction. Those who completed the follow-up were older, had higher education levels, were in their relationships longer, had lower self-esteem, and had lower relationship satisfaction.

Table 1

Sample Demographics for Entire Sample at Baseline

	Percent	Mean	Median	SD
Age				
(18-71)		28.05	27	9.17
Gender				
Male	45.0			
Female	54.1			
Prefer not to answer	0.9			
Race/Ethnicity				
Non-Hispanic White	52.5			
Black	7.9			
Hispanic	15.2			
Asian	20.9			
Other	3.5			
Employment				
Working	83.9			
Not Working	10.2			
Student	4.9			
Education				
Less than High School	0.4			
High School	13.2			
Some College	25.8			
College	48.7			
Advanced Degree	12.1			
Sexual Orientation				
Heterosexual (straight)	77.1			
Homosexual (gay)	3.3			
Bisexual	16.8			
Other	2.0			
Prefer not to answer	0.7			
Relationship Status				
Dating	46.4			
Cohabitating	14.4			
Married	39.1			
Relationship Length				
More than 3 months, less than 2 years	46.1			
More than 2 years, less than 5 years	28.2			
More than 5 years	25.8			

N = 547

Procedure

Participants were asked to participate in a short-term longitudinal online study that is investigating the links between social media use and romantic relationships. They were asked to complete a baseline survey, as well as a brief follow-up survey one month later. Participants received compensation for both the baseline and follow-up portions of the study. SONA participants received 1 credit for each part of the study they completed, while Mechanical Turk participants received monetary compensation for each part they completed. Participants indicated at the end of the baseline survey whether they would like to participate in the follow-up study. Of the 547 total participants, 420 (77%) indicated that they were interested. Of those 420 who indicated that they wanted to participate in the follow-up portion of the study, 181 (43%) completed it. Participants were emailed 1-month after they had taken the baseline survey to notify them that they could take the follow-up survey. Participants were given 10 days after the 1-month mark to complete the follow-up portion. SONA participants were emailed once initially to let them know them know that they were eligible to complete the follow-up portion of the study, and once again as a reminder around 3 days before the deadline if they still had not taken it. Mechanical Turk participants were sent messages through their Mechanical Turk accounts following the same procedure as the SONA participants.

Measures

Sociodemographics. Demographic characteristics believed to be related to one or more of the major study variables were assessed, including relationship status, relationship length, age, race/ethnicity, education, employment status, sexual orientation. Relationship status was categorized as either dating, cohabiting, or married. Relationship

length was measured by asking participants how long, in total, they had been with their partner and choose between three categories: more than 3 months but less than 2 years, between 2 and 5 years, or over 5 years. Education consisted of five categories: some high school, high school, some college, college, or an advanced degree. Sexual orientation was a self-report of heterosexual or straight, homosexual, bisexual, other, or prefer not to answer. Race/ethnicity was a self-report of non-Hispanic White, African American/Black, Hispanic, Asian, or other.

Relationship Measures. Relationship satisfaction was measured at both waves of data collection using the Relationship Assessment Scale (Hendrick, 1988), which has demonstrated considerable validity and reliability in prior research (Vaughn & Baier, 1999). Participants were asked to rate their relationship on seven items on a scale ranging from 1 = *low satisfaction* to 7 = *high satisfaction*. A mean score for the measure was created such that a higher score indicates greater relationship satisfaction. Baseline and follow-up measures showed adequate internal consistency (baseline: $\alpha = .84$; follow-up: $\alpha = .82$).

Relationship commitment was measured using the *Commitment Level* portion of the *Investment Model Scale* (Rusbult, Martz, & Agnew, 1998). Rusbult, Martz and Agnew (1998) stated that it is acceptable to use the Commitment Level portion of the scale independently ($\alpha = .91$ - $.95$). Participants were asked to rate their commitment to their relationship on seven items on a scale ranging from 1 = *do not agree at all* to 8 = *agree completely.* A mean score for the measure was created such that a higher score indicates greater commitment to one's relationship. The scale demonstrated adequate

internal consistency at both waves of data collection (baseline: α = .84; follow-up: α = .82).

Social Media Measures. Social media use was measured by asking participants about the frequency with which they use social networking sites. Participants were asked, "*How many days in the past week have you been on any social networking sites?*" which had options ranging from 0 days to 7 days. They were also asked, "*How many hours a day do you spend on social networking sites?*" which was an open-ended question. Participants were also asked about each social media platform specifically. For Facebook, Instagram, Twitter and Snapchat, participants were asked, "*How often do you use this social networking site?"* and rank their use from 1 = *never* to 7 = *very often.* In addition, they were asked to rank their SNS use by platform, ranking what they use the most to the least. The platforms included were Facebook, Instagram, Twitter, and Snapchat, as well as an "other" option for which they could specify a different platform/site of their choosing.

Passive social media use was measured using a 5-item scale created by Chen, Fan, Liu, Zhou, and Xie (2016) titled *Passive SNS Use (PSNSU),* who found the scale to have acceptable reliability (α = .79). Response options range from 1 = *completely not true* to 5 = *completely true.* Example items include, "*I am very active in social networking sites*," and "*I often comment on friends' posts or status*". Reverse-worded items were recoded and a mean score for the measure was created such that a higher score indicates higher passive SNS use. In the current study, this scale demonstrated poor internal consistency (α = .53). The Spearman's Brown Prophecy formula was conducted, which showed that increasing the number of items by a factor of 3 would increase the reliability to an

acceptable level (α = .77). Because of this scale's poor reliability, it was only examined during descriptive analyses and exploratory post-hoc analyses.

Active social media use was measured using an adapted scale created by Pagani, Hofacker, and Goldsmith (2011) which consists of six items. Participant instructions were not clear in the original article, so instructions were created. Although the original article did not state the specific instructions given to participants, it did state that the measure was "based on time spent using the active functionalities made possible through the selected social networks" (Pagani, Hofacker, & Goldsmith, 2011). With this information I made my instructions state, "The following are some ways in which people use social networking sites. Please indicate how often you engage in each of the behaviors listed." Some of the behaviors listed on the scale were "*meet new people*" and "*post/upload videos and pictures*". The original article also did not specify the scale used for responses, but they did emphasize that the measure was based on time spent doing each activity. Using this information, I decided to use a Likert-type response scale asking participants to rate how often they engage in each behavior with responses ranging 1 = *never* to 5 = *very often*. Pagani, Hofacker, and Goldsmith (2011) did not indicate how to calculate scores for their measure, so for the current thesis I have decided to calculate a mean score for the measure such that a higher score will indicate higher active SNS use. This scale demonstrated adequate internal reliability (α = .87). Theoretically, passive use and active use are thought to be opposites of each on a spectrum; you cannot be high on both passive and active use. This means that if you score high on passive use, it indicates that you are also low on active use. The scales for both passive and active use are still relatively new, so both were included to ensure that they were correctly measuring

participants' social media use. However, because the reliability for the passive use scale was so low, scores for active use were used in the models.

Intrapersonal Measures. Social comparison orientation was measured using the *Iowa-Netherlands Comparison Orientation Measure* (INCOM) (Gibbons & Buunk, 1999). The INCOM consists of 11 items and has demonstrated acceptable reliability with alphas ranging from .78 to .85 across 10 American samples. Responses range from 1 = *disagree strongly* to 5 = *agree strongly*, and a mean score was created with higher scores indicating higher levels of SCO. Example items include, "*I often compare myself with others with respect to what I have accomplished in life*," and "*If I want to learn more about something, I try to find out what others think about it*". A reliability analysis was conducted showing an acceptable level of internal consistency for this scale ($\alpha = .84$).

Relationship-contingent self-esteem was measured using the *Relationship-Contingent Self-Esteem Scale* developed by Knee, Canevello, Bush, and Cook (2008), who found the scale to be reliable and valid ($\alpha > .85$). Participants answered 11 questions to evaluate the extent to which their self-esteem is contingent upon how their relationship is going on a scale ranging from 1 = *not at all like me* to 5 = *very much like me*. Example items include, "*I feel better about myself when it seems like my partner and I are getting along*," and "*An important measure of my self-worth is how successful my relationship is*". A mean score for the measure was created such that a higher score indicates a higher level of RCSE. Internal consistency for the scale was at an acceptable level ($\alpha = .84$).

Potential Covariates. General self-esteem was assessed at baseline only using the *Rosenberg Self-Esteem Scale* (Rosenberg, 1965). Participants indicated the extent to which they agree with ten items regarding their self-esteem (e.g. "*I feel that I have a*

number of good qualities"; "I am able to do things as well as most other people"). Responses range from 1 = *strongly disagree* to 4 = *strongly agree,* and a mean score of the items was created with higher scores indicating greater self-esteem. The scale demonstrated adequate internal consistency (α = .87).

Social self-esteem was assessed using Repisti and Kerla's *Social Self-Esteem Scale* (2011), which has shown acceptable reliability (α = .84). The scale consists of nine items with responses ranging from 1 = *totally disagree* to 6 = *totally agree*. Example items include, "*I make friends easily*," and "*I am popular among my peers*". A mean score of the items was created with higher scores indicating higher levels of social self-esteem. Internal consistency was at acceptable level for this scale (α = .91).

Subjective well-being was measured using the *Satisfaction with Life Scale* developed by Diener, Emmons, Larsen, and Griffin (1985). Although an older scale, Diener and Pavot (2008) conducted a review of the scale 23 years later and found it to still be a valid and reliable measure of subjective well-being. Example items include, "*In most ways my life is close to my ideal*" and, "*The conditions of my life are excellent*". Participants rated the extent to which they agree with five items with options ranging from 1= *strongly disagree* to 7 = *strongly agree.* A mean score of the items was created with higher scores indicating higher levels of subjective well-being. This scale demonstrated acceptable internal consistency at both waves of data collection (baseline: α = .89; follow-up: α = .89)

Relationship social comparison was measured using the *Relationship Social Comparison Measure* created by Smith LeBeau and Buckingham (2008), who found the measure to have good reliability and validity (α > .90). The measure consists of 24

questions designed to evaluate the extent to which an individual compares their romantic relationship to other relationships. Example items include, "*I compare how happy I am in my relationship to how happy I think others are in their relationships*," and "*I pay a lot of attention to how well my partner and I resolve problems compared to how well other couples solve their problems*". Participants rated the extent to which they engage in each behavior with options ranging from 1 = *never* to 5 = *always*. A mean score for the measure was created such that a higher score indicates a higher frequency of making relationship social comparisons. A reliability analysis demonstrated good internal consistency for this scale ($\alpha = .97$).

Overview of Analyses

To test the hypotheses, moderation models were completed using Hayes' PROCESS macro (Hayes, 2012) in SPSS with Model 1. Using PROCESS allowed me to test for moderator through simple slopes analysis while including multiple covariates. PROCESS tests for and interaction as well as possible conditional effects. Preliminary examination of the data revealed that all the assumptions of multiple regression (i.e., linearity, normality, homogeneity of regressions) were met in the current dataset. Examination of the bivariate correlation matrix did not reveal any problems with multicollinearity (see Table 2). I also bootstrapped the conditional effects using 5,000 replications to address issues of power. A significant conditional effect is inferred if the bias-corrected confidence intervals do not include zero (Hayes & Preacher, 2014). Separate models were analyzed to examine both cross-sectional and longitudinal effects. Separate models were also analyzed for the whole sample combined, in addition to men and women separately to investigate whether there were gender differences in the effects.

Table 2

Bivariate Correlations of Main Study Variables

	1	2	3	4	5	6	7	8	9
1. SMU Hours/Day	-								
2. Passive Use	-.12**	-							
3. Active Use	.32**	-.44**	-						
4. RCSE	.02	-.12**	.18**	-					
5. SCO	.13**	-.08	.37**	.28**	-				
6. Baseline RS	-.19**	.01	-.16**	.17**	-.15**	-			
7. Follow-Up RS	-.15*	-.09	-.03	.11	-.04	.72**	-		
8. Baseline Com.	-.24**	.01	-.28**	.30**	-.15**	.71**	.52**	-	
9. Follow-Up Com.	-.15*	-.05	-.30**	.20**	-.16*	.71**	.69**	.79**	-

Note. *p ≤ .05, **p ≤ .01. SMU Hours/Day= Social Media Use Hours per Day; Passive Use – higher scores indicate more passive social media use; Active Use – higher scores indicate more active social media use; SCO = Social Comparison Orientation (higher scores indicate more frequent social comparisons); RCSE = Relationship-Contingent Self-Esteem (higher scores indicate greater relationship-contingent self-esteem); RS = Relationship Satisfaction (higher scores indicate greater relationship satisfaction); Com. = Commitment (higher scores indicate greater commitment)

Preliminary analyses revealed many significant covariates. Many of the demographics variables were significantly related to recruitment source, in other words, whether the participant was recruited from SONA or Mechanical Turk. Participants from SONA and Mechanical Turk significantly differed on all demographics variables except for race. The variable "recruitment source" (coded as 0 = SONA participant, 1 = Mechanical Turk participant) was entered in all models to account for the differences between these two pools of participants. Additionally, race, general self-esteem, and social self-esteem were entered as covariates in all models. Gender was entered as a covariate for models that examined the entire sample.

It is important to note that, initially, two measures of social media use were to be used as predictors: hours per day of use and days per week of use. Previous literature has used both to quantify participants' social media use; the current study tested both as

predictors in all models to examine any differences that arose from using one or the other. Because hours per day of social media use emerged as a stronger predictor than days per week of use, only those models using hours per day of social media use as a predictor will be discussed.

Results

As data was collected at two separate time points, analyses were both cross-sectional and longitudinal. For all moderators, low, moderate, and high levels were determined by using -1 standard deviation from the mean, the mean of that variable, and +1 standard deviation from the mean. In all models, "low" use for hours per day of social media use was around zero hours per day, "moderate" use was around three hours per day, and "high" use was around eight hours per day. Because significant differences were exhibited between men and women on the main study variables, each model was tested using the entire sample as well and men and women separately. Additionally, all models were examined with both relationship satisfaction and commitment as outcomes as those were the two constructs designated to measure "relationship health."

Descriptive Statistics

Several trends were seen in the main study variables both across time and for men and women (see Table 3). While women reported using social media significantly more days per week than men ($F(2,539) = 7.13$, $p = .001$), men and women did not differ on hours per day of social media use nor on their reported active or passive use. Women reported significantly higher SCO than men, $F(2,535) = 5.59$, $p = .004$. Men and women also significantly differed on all three of the proposed potential covariates: general self-esteem, relationship comparison, and social self-esteem. Men reported significantly

Table 3

Descriptive Statistics for Main Study Variables by Gender

	Men			Women		
	M	***SD***	***n***	***M***	***SD***	***n***
Days per Week of SMU	5.71_a	1.72	244	6.23_b	1.47	293
Hours per Day of SMU	3.82	5.55	243	3.31	4.10	293
Baseline RS	4.00	0.68	242	4.09	0.78	295
Follow-Up RS	3.69	0.43	70	3.68	0.56	102
Baseline Commitment	7.09_a	1.43	245	7.71_b	1.47	293
Follow-Up Commitment	6.96_a	1.38	75	7.48_b	1.65	104
Passive Use	3.28	0.65	245	3.18	0.76	296
Active Use	3.18	0.94	240	3.04	0.95	294
SCO	3.32_a	0.72	242	3.46_b	0.67	289
RCSE	3.42	0.65	236	3.42	0.71	291
General Self-Esteem	3.10_a	0.72	245	3.50_b	0.69	294
Relationship Comparison	2.97_a	1.08	243	2.68_b	1.01	291
Social Self-Esteem	4.59_a	0.80	238	4.41_b	0.95	287

Note. Different subscripts indicate a significant difference between men and women on the respective variable at $p < .05$.

lower general self-esteem ($F(2, 543) = 21.77$, $p < .001$), higher relationship comparison ($F(2, 538) = 8.08$, $p < .001$) and higher social self-esteem ($F(2, 529) = 5.59$, $p = .004$) than women. Of those who completed the baseline and follow-up portions of the study, men ($p = .01$) and women ($p < .001$) both reported a significant decrease in relationship satisfaction over time.

Passive versus Active Social Media Use

To compare the association of passive versus active social media use on relationship satisfaction, the scores from the *Active Use* scale were utilized because of the low reliability for the *Passive Social Networking Site Use* scale[1] ($\alpha = .53$). Because

[1]Models were also tested with passive use as the moderator to confirm results found with active use. Results supported what was found with active use as the moderator, such that more passive use was negatively related to relationship satisfaction.

passive and active use are viewed as being on a continuum, low scores on the active use scale (i.e., under 3) indicate high passive use, scores in the middle (i.e., around 3) indicate an even balance of active and passive use, and high scores (i.e., above 3) indicate high active use. When discussing the results using this variable as a moderator, low active use will be referred to as "high passive use," moderate active use will be referred to as "balanced use," and high active use will be referred to as "high active use."

To test hypothesis 1, active use was entered as a moderator between hours per day of social media use and baseline relationship satisfaction using the entire sample. Results indicated there was a significant interaction between SMU and active use, p = .005. Simple slopes analysis revealed that social media use had a negative association with baseline relationship satisfaction for those reporting high passive use and balanced use. Those reporting high passive use exhibited a stronger negative association (b = -0.05, SE = 0.02, p = .002) than those reporting balanced use (b = -0.03, SE = 0.01, p = .005), and those who reported high active use exhibited no association with relationship satisfaction (p = .70). These results provided support for hypothesis 1, such that passive social media use would have a negative association with relationship health.

When the cross-sectional model was examined separately for men and women, different results were found for each gender. The model with women exhibited a significant interaction (p = .01), while the model with men did not (p = .33). Women reporting high passive use and balanced use exhibited a negative association between hours per day of social media use and baseline relationship satisfaction. Reflecting the results using the entire sample, women reporting high passive use (b = -0.08, SE = 0.03, p = .01) exhibited a stronger negative association than those reporting balanced use (b = -

0.04, *SE* = 0.02, *p* = .01). Those reporting high active use exhibited no association between hours per day of social media use and baseline relationship satisfaction (*p* = .47) (see Figure 1). When the model was examined for men, however, there was no significant interaction between hours per day of SMU and active use when predicting baseline relationship satisfaction (*p* = .56).

Next, each model was examined longitudinally with hours per day of social media use predicting follow-up relationship satisfaction while controlling for baseline relationship satisfaction. The model using the whole sample produced a nonsignificant interaction (*p* = .66), as did the model for women (*p* = .53). While the model for women did not produce a significant interaction, there was a main effect of active use such that more active use predicted higher follow-up relationship satisfaction controlling for baseline relationship satisfaction, (*b* = 0.14, *SE* = 0.06, *p* = .03). The model for men did exhibit a significant interaction between hours per day of social media use and follow-up relationship satisfaction when controlling for baseline relationship satisfaction (*p* = 0.047). Men reporting high passive use exhibited the strongest negative effect between hours per day of SMU and follow-up relationship satisfaction (*b* = -0.05, *SE* = 0.02, *p* = .02) followed by those reporting balanced use (*b* = -0.03, *SE* = 0.01, *p* = .01) (see Figure 2). For men who reported high active use, hours per day of social media use did not predict follow-up relationship satisfaction (*p* = .57). The combined results from the cross-sectional and longitudinal models provide further support for hypothesis 1.

Figure 1

Women's Hours per Day of Social Media Use and Baseline Relationship Satisfaction with Active Use as Moderator

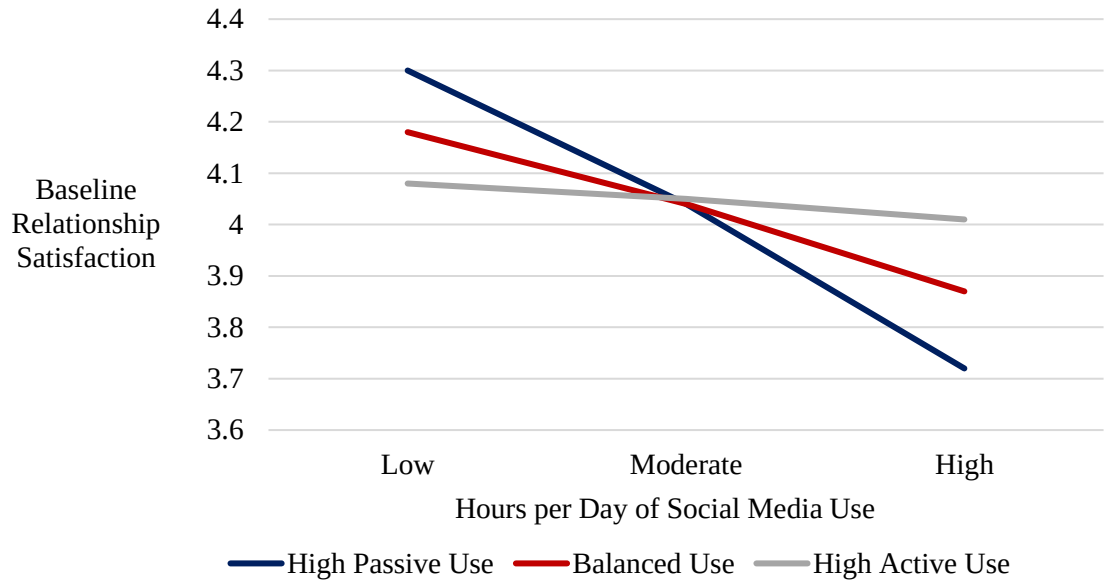
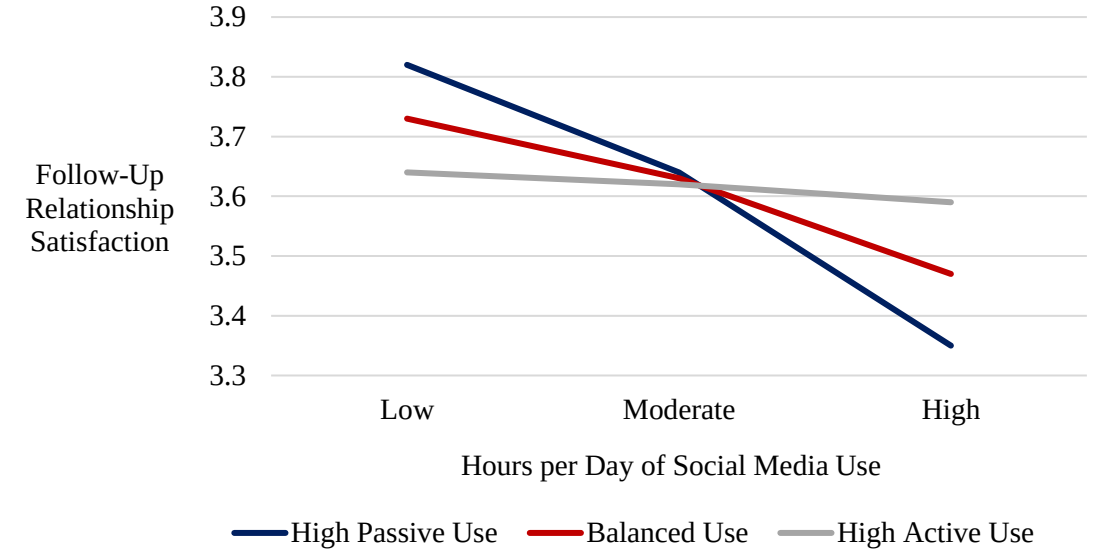


Figure 2

Men's Hours per Day of Social Media Use and Follow-Up Relationship Satisfaction with Active Use as Moderator

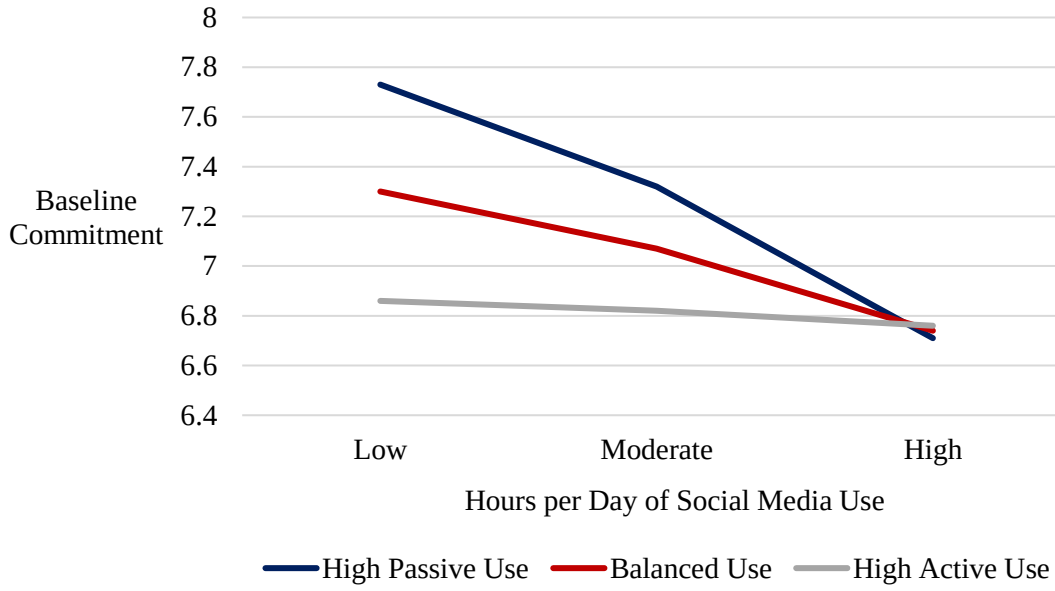


Models were also examined with hours per day of social media use predicting commitment with active use as the moderator. The model using the entire sample produced a marginal interaction (p = .07) with significant conditional effects. Those reporting high passive use exhibited a negative association between hours per day of social media use and baseline commitment (b = -0.09, SE = 0.03, p = .01), as well as those reporting balanced use (b = -0.05, SE = 0.02, p = .01). Mirroring the results for relationship satisfaction, those reporting high active use did not exhibit a significant interaction between active use and hours per day of social media use (p = .13).

When separate models were examined for each gender, different results were found for men and women. The model examining men produced results mirroring those of the model using the whole sample, whereas the model examining women did not produce any significant findings. For men, there was a main effect of active use on baseline commitment (b = -0.46, SE = 0.12, p < .001) such that more active use was related to lower commitment. There was also a significant interaction between active use and hours per day of social media use in predicting baseline commitment for men (p < .001), with men reporting high passive use (b = -0.11, SE = 0.04, p = .01) and balanced use (b = -0.06, SE = 0.02, p = .01) showing a negative association between the two (Figure 3). The results from the models predicting commitment did not support hypothesis 1 because, in this case, more *active* use was related to less commitment rather than more *passive* use as predicted. However, it is important to note that when male participants used social media at a high number of hours per day there was no difference in commitment levels between those who reported high passive use and those who

Figure 3

Men's Hours per Day of Social Media Use and Baseline Commitment with Active Use as Moderator



reported high active use. Longitudinal models were examined for the entire sample, as well as men and women separately, and none of these produced any significant results.

Relationship-Contingent Self-Esteem

Hypothesis 2 predicted that relationship-contingent self-esteem (RCSE) would act as a moderator between social media use and relationship health. To test this hypothesis, a moderation model was conducted with hours per day of social media use predicting baseline relationship satisfaction with RCSE as the moderator. While the model examining the entire sample produced a nonsignificant interaction, there was a significant main effect of RCSE on baseline relationship satisfaction as predicted by hypothesis 2 such that higher RCSE was related to higher relationship satisfaction (b = 0.21, SE = 0.06, $p < .001$) (Figure 4).

When each gender was examined separately, a significant main effect of RCSE arose for both men (b = 0.23, SE = 0.06, p < .001) and women (b = 0.25, SE = 0.09, p = .004). For both men and women, those who scored high on RCSE reported significantly higher baseline relationship satisfaction than those who reported moderate RCSE scores, and those reporting moderate RCSE reported higher baseline relationship satisfaction than those reporting low RCSE. When examining the longitudinal models with hours per day of SMU predicting follow-up relationship satisfaction controlling for baseline relationship satisfaction, no significant main effects or interactions were found with RCSE.

Additional analyses were conducted to examine if this trend arose with commitment as the outcome rather than relationship satisfaction. There was a main effect of RCSE on baseline commitment (b = 0.72, SE = 0.10, p < .001) (Figure 5) such that higher RCSE was related to higher commitment. The separate models for men and women both produced this main effect as well, with women (b = 0.88, SE = 0.18, p < .001) showing a stronger association than men (b = 0.57, SE = 0.14, p < .001). For each model, those who reported high RCSE exhibited the highest levels of baseline commitment, followed by those who reported moderate RCSE, then those who reported low RCSE. Longitudinal models were examined as well, with hours per day of social media use predicting follow-up commitment while controlling for baseline commitment. No significant main effects or interactions were found when examining the longitudinal models for the entire sample, or for men and women separately.

Figure 4

Entire Sample's Hours per Day of Social Media Use and Baseline Relationship Satisfaction with RCSE as Moderator

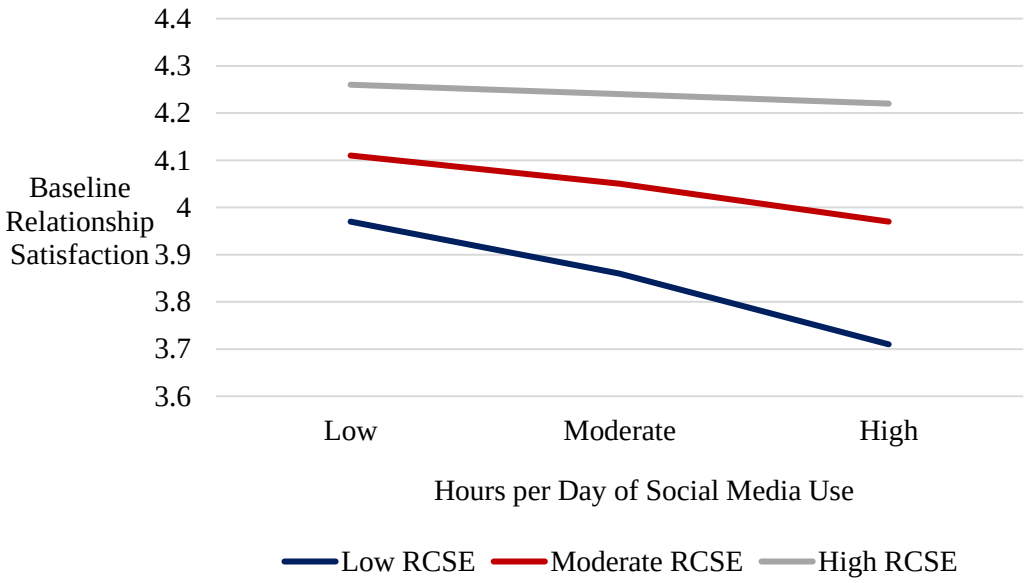
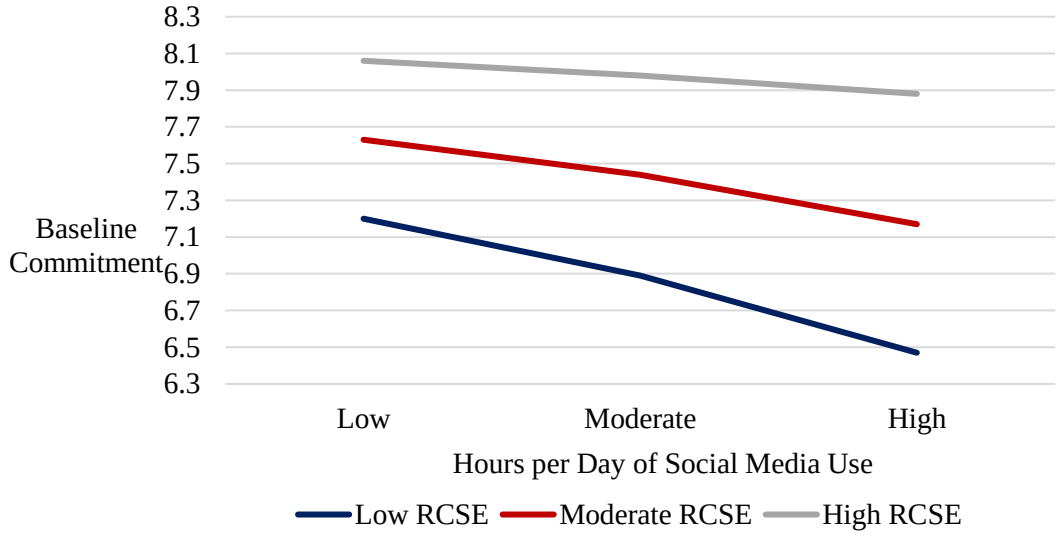


Figure 5

Entire Sample's Hours per Day of Social Media Use and Baseline Commitment with RCSE as Moderator



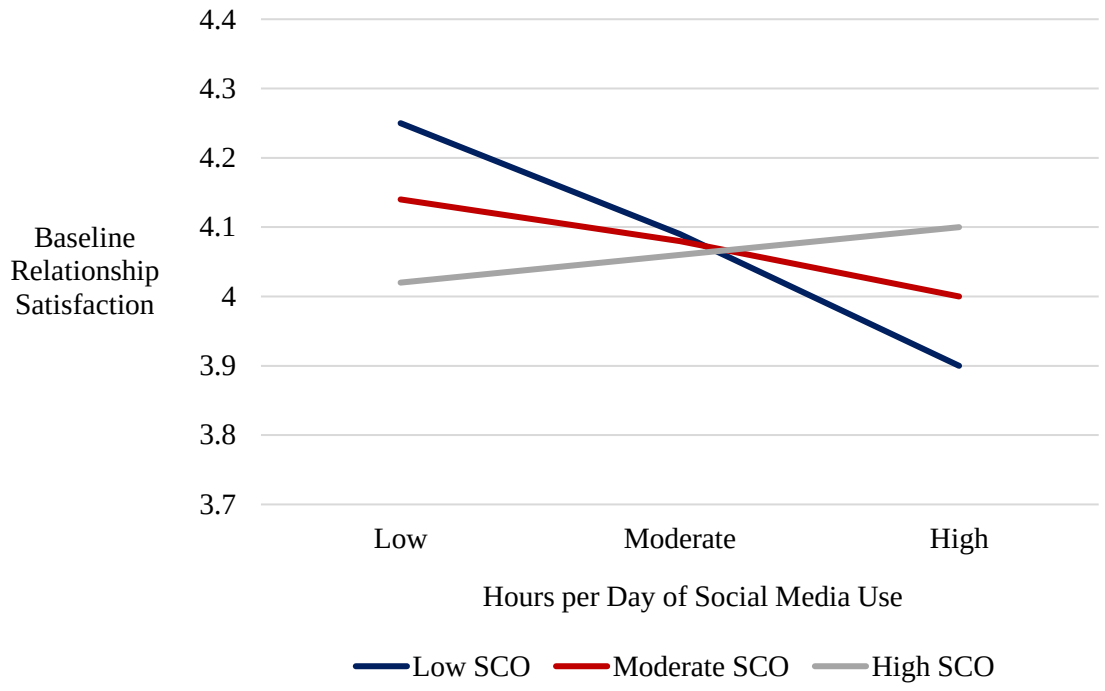
Social Comparison Orientation

Hypothesis 3 predicted that social comparison orientation (SCO) would moderate the association between social media use and relationship health, such that individuals with high levels of SCO would show a negative association between social media use and relationship health. To test this hypothesis, a model was analyzed with SCO as the moderator between hours per day of social media use and baseline relationship satisfaction. When examining the model using the entire sample, there was a nonsignificant interaction between hours per day of social media use and baseline relationship satisfaction (p = .13).

This model was then examined for men and women separately and a significant interaction arose for women (p = .047), but not for men (p = .77). Women who reported low levels of SCO exhibited a negative association between hours per day of social media use and baseline relationship satisfaction (b = -0.05, SE = 0.02, p = .02), but women who reported moderate (p = .10) or high levels (p = .52) did not (Figure 6). Longitudinal models with SCO moderating the association between hours per of social media use and follow-up relationship satisfaction controlling for baseline relationship satisfaction produced nonsignificant effects for both men and women. These combined results of the cross-sectional and longitudinal models did not provide support for hypothesis 3 as I predicted that high, not low, levels of SCO would lead to a negative association between social media use and relationship satisfaction.

Figure 6

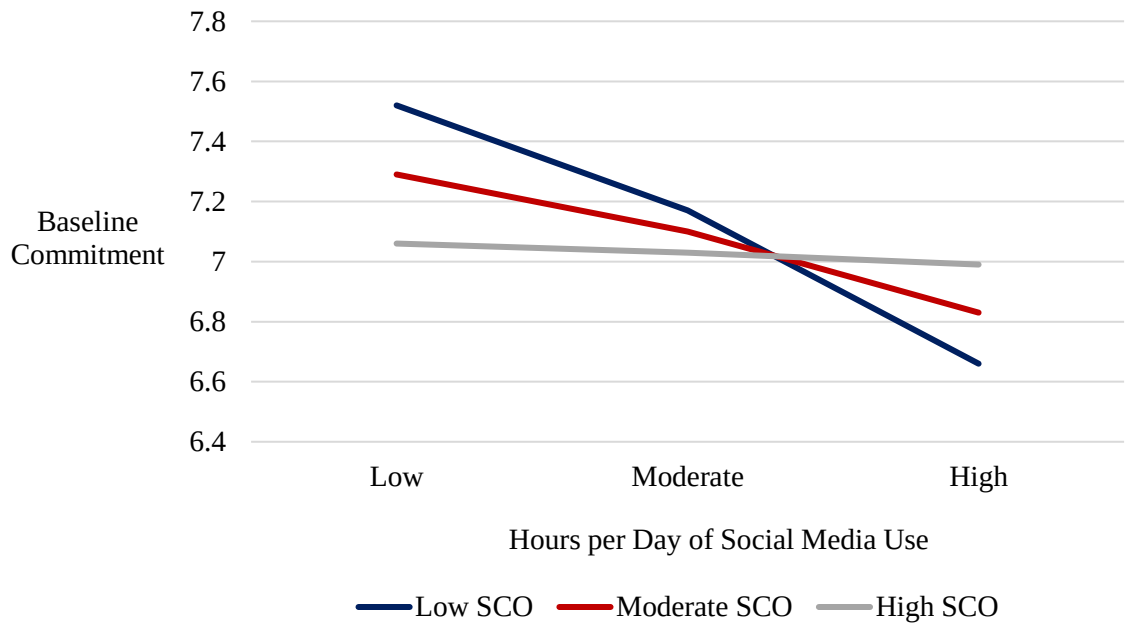
Women's Hours per Day of Social Media Use and Baseline Relationship Satisfaction with SCO as Moderator



Next, models with commitment as the outcome were examined. For the model examining the entire sample, a marginal main effect of SCO on baseline commitment arose such that higher SCO was related to lower commitment (b = -0.21, SE = 0.11, p = .052). The interaction between hours per day of social media use and SCO, however, was nonsignificant (p = .13). When examining the model separately for men and women, gender differences arose regarding the main effect. The model examining men produced a significant main effect of SCO on baseline commitment such that higher SCO was associated with lower commitment (b = -0.31, SE = 0.04, p = .03) (Figure 7). The model for women did not produce a significant main effect (p = .54). Longitudinal models with

Figure 7

Men's Hours per Day of Social Media Use and Baseline Commitment with SCO as Moderator



SCO acting as a moderator between hours per day of social media use and follow-up commitment controlling for baseline commitment did not produce any significant results.

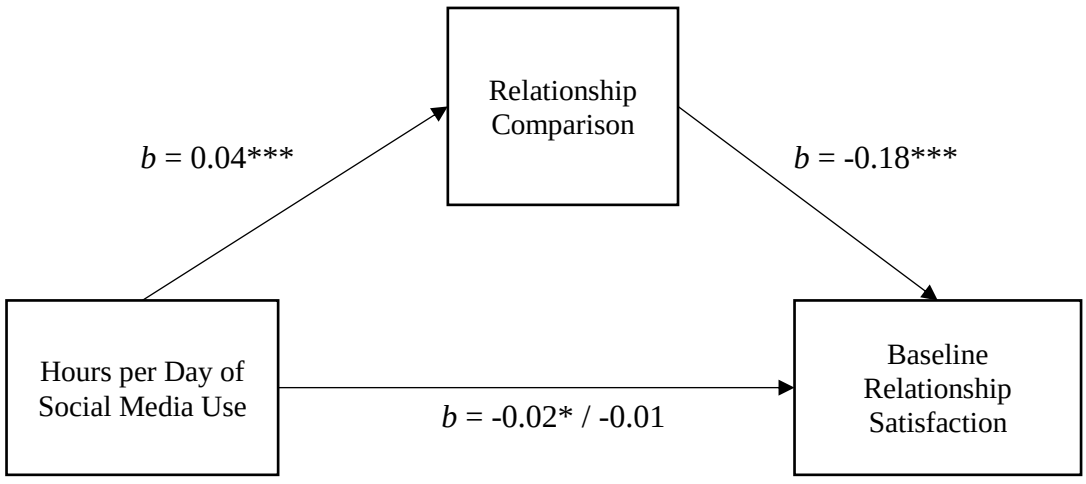
Post-Hoc Mediation Models

Relationship comparison was initially entered as a covariate in the analyses, However, the degree to which an individual compares their relationship to others may act as a mediator between social media use and relationship health as it is likely to be influenced by the amount of social media use. In the current sample, relationship comparison was significantly associated with hours per day of social media use (b = 0.03, SE = 0.01, p < .001), baseline relationship satisfaction (b = -0.16, SE = 0.08, p = .04), and baseline commitment (b = -0.12, SE = 0.04, p = .002); thus, it is plausible that it might be

an explanatory mechanism. When this mediation model was examined using the entire sample, there was a significant indirect effect between hours per day of social media use and baseline relationship satisfaction through relationship comparison (*b* = -0.01, *SE* = 0.002, 95% CI [-0.01, -0.003] (see Figure 8). Men and women both showed similar results regarding the mediation model, producing near identical parameter estimates (men: b = -0.01, SE = 0.003, 95% CI = -0.01, -0.001; women: b = -0.01, SE = 0.004, 95% CI = -0.02, -0.002). Because the association between hours per day of social media use and baseline relationship satisfaction became nonsignificant when relationship comparison was entered in the model, this indicated there was full mediation through relationship comparison. However, this indirect effect was only significant in the cross-sectional model. Longitudinal mediation models with follow-up relationship satisfaction (controlling for baseline relationship satisfaction) failed to produce significant results.

Figure 8

Mediating Effect of Relationship Comparison on Hours per Day of Social Media Use and Baseline Relationship Satisfaction for the Entire Sample

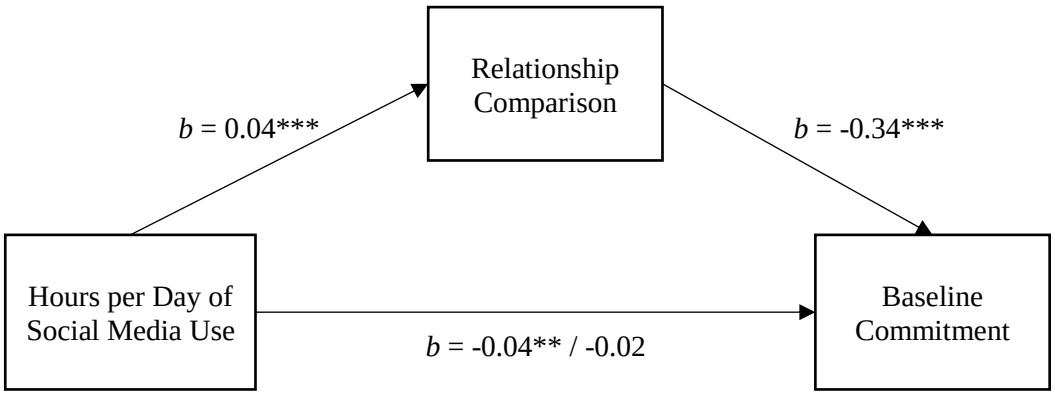


Note. * p < .05, *** p < .001

Next, the mediation model was examined with baseline commitment as the outcome rather than baseline satisfaction. When this mediation model was examined using the entire sample, there was a significant indirect effect between hours per day of social media use and baseline commitment through relationship comparison (*b* = -0.01, *SE* = 0.004, 95% CI [-0.02, -0.01]) (Figure 9). As with the models predicting relationship satisfaction, men and women's models with commitment as the outcome produced near identical parameter estimates (men: *b* = -0.01, *SE* = 0.01, 95% CI = -0.02, -0.01; women: *b* = -0.01, *SE* = 0.01, 95% CI = -0.02, -0.002). Because the association between hours per day of social media use and baseline commitment became nonsignificant when relationship comparison was entered in the model, this indicated there was full mediation through relationship comparison. As with relationship satisfaction, the mediation was only significant in the cross-sectional model. The longitudinal mediation models were with follow-up commitment as the outcome failed to produce significant results.

Figure 9

Mediating Effect of Relationship Comparison on Hours per Day of Social Media Use and Baseline Commitment for the Entire Sample



Note. ** p < .01, *** p < .001.

Discussion

The current thesis examined the association between social media use and relationship health, with a specific focus on possible moderators within this association. Three hypotheses were tested to determine whether 1) type of social media use, 2) relationship-contingent self-esteem, or 3) social comparison orientation moderated the association between social media use and relationship health. In addition, gender differences were explored within all of the models (*Research Question*).

Three main points can be concluded from the results of this study. First, passive social media use did act as a significant moderator, such that those who passively used social media exhibited a negative association between social media use and relationship health; this finding lends evidence to the idea that *how* individuals use social media may be more important than *how much* they use it. Second, while RCSE did not act as a moderator it was found to be consistently related to better relationship satisfaction and commitment. Finally, post-hoc mediation models revealed that relationship comparison may help to begin to explain the process of how social media use impacts relationship health. The implications of these results, as well as limitations and future directions, are discussed below.

Influence of Passive Social Media Use on Relationship Health

Previous research has found passive social media use to be harmful to well-being (Shaw, Timpano, Tran, & Joormann, 2015; Verduyn, Lee, Park, Shablack, Orvell, Bayer, Oscar, Jonides, & Kross, 2015; Chen, Fan, Liu, Zhou, & Xie, 2016; Wang, Gaskin, Rost, & Gentile, 2017). The current thesis study sought to explore whether passive social media use would be harmful specifically to relationship health. Passive social media use

emerged as being harmful for relationship health for both women and men. Participants who reported using social media passively had consistently exhibited a negative association between hours per day of social media use and relationship health, whereas participants who reported using social media actively did not. This suggests that the frequency of social media use may not necessarily be harmful to relationship satisfaction, but rather *how* social media is used.

Furthermore, an interesting gender difference was found for passive use such that women exhibited a significant cross-sectional moderation while men only exhibited a significant longitudinal moderation. Men who reported using social media passively exhibited a negative effect between hours per day of social media use and follow-up relationship satisfaction, whereas women only showed this association at baseline. Women did, however, exhibit a significant main effect of active use on follow-up relationship satisfaction such that more active use was associated with higher follow-up relationship satisfaction. It is possible that when it comes to relationship satisfaction, women are more sensitive to effects from their social media use while men experience the decline in relationship satisfaction over time as a "symptom" of their social media use. Past research has found that women tend to report more issues in their romantic relationships than do men (Levinger, 1979; Macklin, 1978; Rubin, Peplau, & Hill, 1981). Further research has shown this may be due to women having higher standards in their relationships as well as feeling more often that those standards are not being met (Vangelisti & Daly, 1997). Perhaps when women use social media more passively, they more frequently compare their relationship to those that they see online which makes them realize their own standards are not being met in their relationship. Conversely,

men's passive social media use may be inadvertently affecting their relationship satisfaction over time through other means. Rather than making men realize their relationship is not up to the standards of couples they see online, more passive social media use may lead men to perceive a better quality of alternative partners, which in turn makes them less satisfied with their own.

When commitment was examined as an outcome rather than relationship satisfaction, only men produced a significant interaction. For men who used social media passively, the more hours per day they were on social media the lower their baseline commitment. This harkens back to the idea that when men passively use social media they see alternative partners which then makes them feel less committed to their current partner. Future research should attempt to replicate these findings to better understand how passive social media use affects men and women differently. If similar results arise within a new sample, they can then be interpreted with more confidence. It is clear that passive use has an influence on relationship health regardless of gender, so future research should further investigate these associations.

Influence of Relationship-Contingent Self-Esteem on Relationship Health

Although empirical research on RCSE is extremely limited, it is well developed as a theoretical construct. Knee, Canevello, Bush, and Cook (2008) thoroughly investigated RCSE through four separate studies and found those high on RCSE to report higher levels of commitment; however, they did not find it to be related to relationship satisfaction. The findings of the current study partially support Knee et al.'s findings. For both men and women, higher RCSE was related to greater commitment and greater relationship satisfaction. Although RCSE did not interact with social media use in

predicting these relationship outcomes as predicted by hypothesis 2, the results are still interesting. Knee et al. (2008) define RCSE as unhealthy for self-esteem, yet in the current study it was related to better relationship health. It is important to note, however, that RCSE and relationship health may act as independent constructs that do not influence each other. The longitudinal models for men and women did not produce significant main effects, so high RCSE may not *lead* to greater relationship satisfaction or commitment but is simply associated with it. Future research is needed to explore this concept and delve deeper into the ways that it affects relationships. While RCSE did not act as a significant moderator, there was a trend that appeared in the graphs. For those who scored high on RCSE, there appeared to be no relationship between social media use and relationship health. For those low on RCSE, however, there was a slight negative association between social media use and relationship health. This may indicate that social media may actually work as a buffer to the negative effects that are associated with being high on RCSE. As some researchers have suggested, social media may benefit those high on RCSE because it allows them to show off their relationship and show how well it is going for them which in turn makes them feel better. It is important to note that while this trend was apparent on graphs, the interaction between RCSE and social media use was not significant, so this interpretation is to be taken with caution. More research is needed to see if this trend replicates in larger, more diverse samples. It is evident that more research is needed on this construct to uncover the complex ways that it affects relationship health, and the factors that may influence it.

Emerging Importance of Relationship Comparisons

Past research has suggested that high social comparison orientation (SCO) may be harmful to well-being (Gibbons & Buunk, 1999; Vogel, Rose, Okdie, Eckles, & Franz, 2015; Wang, Wang, Gaskin, & Hawk, 2017). However, the current study had little to no findings regarding SCO's impact on relationship health or social media use. While there was a main effect for men such that higher SCO was related to lower commitment, the findings are to be interpreted with caution as these results may be artifact considering the large number of analyses.

While social comparison orientation did not act as a significant moderator, I theorized that possibly the more relationship-specific comparison measure would be associated rather than the general comparison measure. In a series of post-hoc analyses, relationship comparison was entered as a mediator between hours per day of social media use and relationship health to investigate whether this more specific type of comparison would be related. The results of the mediation models with relationship comparison mediating the association between social media use and relationship health both produced significant similar indirect effects for men and women. In the model with baseline relationship satisfaction as the outcome, hours per day of social media use was related to more relationship comparisons which was then related to lower relationship satisfaction. Similarly, the model with commitment as the outcome produced a significant indirect effect through relationship comparison such that hours per day of social media use was related to increased relationship comparisons, which was then associated with lower baseline commitment. The parameter estimates were nearly identical for both men and women in both of these mediation models. These indirect effects begin to hint at a

process through which social media use may influence relationship health. They suggest that perhaps general social comparisons on social media may not be harmful for relationship outcomes, but instead it is the specific comparisons one makes regarding their romantic relationship. The process through which social media affects relationship health is lacking in research, and it requires a much more thorough investigation to be fully understand. It is clear that social media impacts relationship health and, therefore, future research should be aimed at understanding *how* social media impacts it.

Limitations

One limitation of the current study was the low reliability of the *Passive Social Networking Site Use* scale. The intent was to include a scale that measured passive use and one that measured active use so that the results could be compared to provide stronger evidence. Unfortunately, because the reliability of the scale was so low, this was not able to be done. While analyses using the *Passive Social Networking Site Use* scale mirrored the results of the models using the *Active Use* scale, those results should be interpreted with caution.

Another limitation was the small sample size for the follow-up portion of the study (n = 181). The small sample size led to lower power, which may have been the reason why I did not find significant longitudinal effects. While many of the longitudinal models showed a trend, none of the effects were significant likely due to low power. When the longitudinal models were examined by gender, it further decreased the sample size in each model by splitting it into males and female.

While collecting participants through both ASU's SONA system and Amazon's Mechanical Turk allowed me to get a relatively diverse sample in terms of age, both

samples ended up having around 50% White participants and mostly college graduates. It would have been more ideal to have a more diverse sample in terms of race and education. Additionally, this study examined all ages combined in the models while it may have been better to compare age groups to one another. Young adults use social media different than middle and late adults so I may have found different results for each age group.

Lastly, another limitation of this study is that I was unable to measure all the variables at both time points. Because of fund and fear of participants not completing the follow-up, it was decided to make the follow-up survey as brief as possible. It is possible that the findings might have been richer and more in-depth if all the variables were measured at each time point.

Conclusion

Social media has become an integral part of many people's lives, and thereby, is bound to affect different areas of life. While the influence that social media has on well-being has been heavily researched, little has been done to uncover its influence on romantic relationships. Many individuals post about their relationships online and find it important to integrate their relationships to their online identities. The current thesis study has begun to uncover some of the complex associations between social media use and romantic relationship outcomes. There were three main ideas pointed out by the results of this study. First, those who passively used social media displayed negative associations between social media use and relationship health, suggesting that passive social media use is harmful beyond general well-being as previous research has found. Second, while RCSE did not moderate the association between social media use and relationship health,

it did produce main effects for men and women such that higher RCSE was related to better relationship health which is contrary to some previous research. Finally, while SCO did not emerge as a significant moderator, relationship comparison did emerge as a mediator between hours per day of social media use and relationship health in post-hoc analyses. Findings within longitudinal models were limited by low power due to a small number of individuals completing the follow-up portion of the study. Future research should further investigate possible longitudinal effects with a larger sample size. In conclusion, these findings begin to shed light on how social media use can influence romantic relationship health. As the popularity of social media grows with each day, it is necessary to further investigate the impact it can have on our most important close relationships.

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APPENDIX A

ALL QUESTIONS AND MEASURES USED IN STUDY

Demographics Questions

1. What is your current relationship status?
    a. Single
    b. Dating
    c. Cohabitating (living with partner, but not married)
    d. Married
2. How long have you been with your current romantic partner?
    a. Less than 3 months
    b. More than 3 months, less than 2 years
    c. More than 2 years, less than 5 years
    d. More than 5 years
3. What is your age, in years? (Please only respond with whole numbers. No decimals or fractions.)
4. What is the highest level of school you have completed or the highest degree you have received?
    a. Less than high school degree
    b. High school graduate (high school diploma or equivalent including GED)
    c. Some college but no degree
    d. Associate degree in college (2-year)
    e. Bachelor's degree in college (4-year)
    f. Master's degree
    g. Doctoral degree
    h. Professional degree (JD, MD)
5. Choose the race/ethnicity that you most identify with:
    a. Non-Hispanic White
    b. African American or Black
    c. Hispanic
    d. Asian
    e. Other
6. What is your gender?
    a. Male
    b. Female
    c. Transgender/Other
    d. Prefer not to answer
7. Which of the following best describes your sexual orientation?
    a. Heterosexual (straight)
    b. Homosexual (gay)
    c. Bisexual
    d. Other
    e. Prefer not to answer

8. Which statement best describes your current employment status?
   a. Working (paid employee)
   b. Working (self-employed)
   c. Not working (temporary layoff from a job)
   d. Not working (looking for work)
   e. Not working (retired)
   f. Not working (disabled)
   g. Not working (other)
   h. Prefer not to answer

Exploratory Questions

1. In comparison to others your age, how much would you say you use social media? (Including sites/apps such as Facebook, Instagram, Snapchat, Twitter, Tumblr, etc.)
   1. Far less than the average person.....2.....About as much as the average person.....4.....Far more than the average person
2. In comparison to the average person, how often would you say that you compare yourself to others?
   1. Far less than the average person.....2.....About as much as the average person.....4.....Far more than the average person

Questions about Social Media Use

The following questions will ask you about both you and your partner's behaviors on social media. Please each question carefully and respond correctly.

1. How often do you use each of the social media platforms listed below? Please answer thinking about how often you use each platform currently.

Facebook:

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	Very Often

Instagram:

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	Very Often

Snapchat:

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	Very Often

Twitter:

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	Very Often

Tumblr:

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	Very Often

2. Please rank the following social media platforms by how often you use each of them. Type a 1 in the box next to the platform you use most often, type a 2 in the box next to the platform that you use next often, and so on. If a platform that you frequently use is not listed, please enter it in the "other" option then rank it as you would all of the other options. You do not need to rank every option. If you do not use an option listed just leave the box next to it blank.

_____ Facebook
_____ Instagram
_____ Snapchat
_____ Twitter
_____ Tumblr
_____ Other

3. How many days in the past week have you been on social media? (including, but not limited to, Facebook, Instagram, Snapchat, Twitter and Tumblr)

a. 0 days
b. 1 day
c. 2 days
d. 3 days
e. 4 days
f. 5 days
g. 6 days
h. 7 days

4. In general, about how many hours per day do you spend on social media? Please answer using whole numbers or decimals, not fractions. For example, use 0.5 for 30 minutes.

5. In general, about how many hours per day does your partner spend on social media? Please answer using whole numbers or decimals, not fractions. For example, use 0.5 for 30 minutes.

6. In general, how often do you post about your relationship on social media? This includes posting a status, a photo or a comment.

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	All the time

7. Is the content that you post related to your relationship generally positive or negative?

1	2	3	4	5

Extremely negative	Somewhat negative	Neither positive nor negative	Somewhat positive	Extremely positive

8. Is it important to your partner that you post about your relationship on social media?

1	2	3	4	5
Not at all important	Slightly important	Moderately important	Very important	Extremely important

9. In general, how often does your partner post on social media? This includes posting a status, a photo or a comment.

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	All the time

10. In general, how often does your partner post about your relationship on social media? This includes posting a status, a photo or a comment.

1	2	3	4	5
Never	Sometimes	An average amount	Frequently	All the time

11. Is the content that your partner posts related to your relationship generally positive or negative?

1	2	3	4	5
Extremely negative	Somewhat negative	Neither positive nor negative	Somewhat positive	Extremely positive

12. Is it important to you that your partner posts about your relationship on social media?

1	2	3	4	5
Not at all important	Slightly important	Moderately important	Very important	Extremely important

Relationship Social Comparison Measure
(Smith LeBeau and Buckingham, 2008)

Use the following scale for all questions:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. I compare how happy I am in my relationship to how happy I think others are in their relationships.

2. I pay a lot of attention to how well my partner and I resolve problems compared to how well other couples solve their problems.

3. I think about what types of activities my partner and I participate in together compared to what other couples do together.

4. I compare how my partner and I treat each other to how other couples treat each other.
5. I think about how well my partner and I communicate with each other compared to how well other couples communicate with each other.
6. I compare how satisfied I am with my relationship to how satisfied I think others are in their relationships.
7. I compare how much time my partner and I spend together to how much time other couples spend together.
8. When I am feeling bad about my relationship I compare my relationship to other peoples' relationships.
9. When I am feeling good about my relationship I compare my relationship with other peoples' relationships.
10. I think about how romantic my relationship is compared to how romantic other couples' relationships are.
11. I compare my relationship with other couples whose relationships are worse than mine.
12. I compare my relationship with other couples whose relationships are better than mine.
13. I think about how romantic my partner is in comparison to other peoples' partners.
14. I compare the things that my partner does for me to what other peoples' partners do for them.
15. I think about how trustworthy my partner is in comparison to other peoples' partners.
16. I compare how supportive my partner is to other peoples' partners.
17. I think about how dependable my partner is in comparison to other peoples' partners.
18. I compare how attractive my partner is to how attractive other peoples' partners are.
19. I think about how successful my partner is in comparison to other peoples' partners.
20. I compare how considerate my partner is to how considerate other peoples' partners are.
21. I think about how often my partner and I argue compared to how often other couples argue.
22. I compare my relationship to other peoples' relationships when I am in a good mood.
23. I compare my relationship to other peoples' relationships when I am in a bad mood.

24. I enjoy listening to other people talk about their relationships

Relationship-Contingent Self-Esteem Scale
(Knee, Canevello, Bush, & Cook, 2008)

Use the following scale for all questions:

1	2	3	4	5
Not at all like me		Somewhat like me		Very much like me

1. I feel better about myself when it seems like my partner and I are getting along.
2. I feel better about myself when it seems like my partner and I are emotionally connected.
3. An important measure of my self-worth is how successful my relationship is.
4. My feelings of self-worth are based on how well things are going in my relationship.
5. When my relationship is going well, I feel better about myself overall.
6. If my relationship were to end tomorrow, I would not let it affect how I feel about myself. (r)
7. My self-worth is unaffected when things go wrong in my relationship. (r)
8. When my partner and I fight, I feel bad about myself in general.
9. When my relationship is going bad, my feelings of self-worth remain unaffected. (r)
10. I feel better about myself when others tell me that my partner and I have a good relationship.
11. When my partner criticizes me or seems disappointed in me, it makes me feel really bad.

Note: (r) = reverse-scored item.

Commitment Level Items from Investment Model Scale
(Rusbult, Martz & Agnew, 1998)

Use the following scale for all questions:

0	1	2	3	4	5	6	7	8
Do Not Agree At All				Agree Somewhat				Agree Completely

1. I want our relationship to last for a very long time.

2. I am committed to maintaining my relationship with my partner.

3. I would not feel very upset if our relationship were to end in the near future.

4. It is likely that I will date someone other than my partner within the next year.

5. I feel very attached to our relationship/very strongly linked to my partner.

6. I want our relationship to last forever.

7. I am oriented toward the long-term future of my relationship (for example, I imagine being with my partner several years from now).

Passive Social Networking Site Use
(Chen, Fan, Liu, Zhou, & Xie, 2016)

Use the following scale for all questions:

1	2	3	4	5
Completely not true				Completely true

1. I am very active in social networking sites.

2. I often comment on friends' posts or status.

3. I often browse social networking sites but don't post status updates.

4. I rarely interact with others on social networking sites.

5. I am relatively passive in social networking sites.

Iowa-Netherlands Comparison Orientation Scale
(Gibbons & Buunk, 1999)

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing "good" or "bad" about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that, we would like to ask you to indicate how much you agree with each statement.

Use the following scale for all questions:

1	2	3	4	5
Disagree strongly	Disagree	Neither agree nor disagree	Agree	Agree strongly

1. I often compare myself with others with respect to what I have accomplished in life.

2. If I want to learn more about something, I try to find out what others think about it.

3. I always pay a lot of attention to how I do things compared with how others do things.

4. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing.

5. I always like to know what others in a similar situation would do.

6. I am not the type of person who compares often with others.

7. If I want to find out how well I have done something, I compare what I have done with how others have done.

8. I often try to find out what others think who face similar problems as I face.

9. I often like to talk with others about mutual opinions and experiences.

10. I never consider my situation in life relative to that of other people.

11. I often compare how I am doing socially (e.g., social skills, popularity) with other people.

The Satisfaction with Life Scale
(Diener, Emmons, Larsen, & Griffin, 1985)

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor disagree	Slightly Agree	Agree	Agree Strongly

1. In most ways my life is close to my ideal.

2. The conditions of my life are excellent.

3. I am satisfied with life.

4. So far I have gotten the important things I want in life.

5. If I could live my life over, I would change almost nothing.

Rosenberg Self-Esteem Scale
(Rosenburg, 1965)

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1	2	3	4
Strongly Agree	Agree	Disagree	Strongly Disagree

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

Social Self-Esteem Scale
(Repisti & Kerla, 2011)

Nine statements are listed below. Please indicate the extent to which you agree with each of them. You can do this by choosing the appropriate number that reflects your degree of agreement. The numbers mean the following:

1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Somewhat Disagree	Somewhat Agree	Mostly Agree	Totally Agree

1. I feel self-confident in social situations.
2. I am easy to love.
3. I make friends easily.
4. I am popular among my peers.
5. I really enjoy social roles.
6. I can really make other people feel good in my presence.
7. I am a friendly person.
8. I am good at holding people's attention and interest.
9. People have lots of fun because of my presence.

Active SNS Use
(Pagani, Hofacker, & Goldsmith, 2011)

The following are some ways in which people use social networking sites. Please indicate how often you engage in each of the behaviors listed.

Use the following scale to answer all questions:

1	2	3	4	5
Never				Very Often

1. Participate in content creation.
2. Share information.
3. Meet new people.
4. Talk to other people.
5. Talk about hobbies and personal interests.
6. Post/upload videos and photos.

APPENDIX B

IRB APPROVAL FOR STUDY

EXEMPTION GRANTED

Kristin Mickelson
Social and Behavioral Sciences, School of (SSBS)
-
Kristin.Mickelson@asu.edu

Dear Kristin Mickelson:

On 8/17/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Are Online Comparisons Damaging Our In-Person Connections? Effects of Social Media Use on Romantic Relationship Outcomes
Investigator:	Kristin Mickelson
IRB ID:	STUDY00008634
Funding:	Name: Social and Behavioral Sciences, School of (SSBS)
Grant Title:	
Grant ID:	
Documents Reviewed:	• Electronic Consent Form MTurk.pdf, Category: Consent Form; • Electronic Consent Form SONA.pdf, Category: Consent Form; • Measures for Baseline Survey.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • IRB Application.docx, Category: IRB Protocol; • Info Shown to MTurk Workers.pdf, Category: Recruitment Materials; • Measures for Follow-Up Survey.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 8/17/2018.
In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,
IRB Administrator
cc: Selena Quiroz
Selena Quiroz

APPENDIX C

BIVARIATE CORRELATIONS OF MAIN STUDY VARIABLES WITH GENERAL SELF-ESTEEM, SOCIAL SELF-ESTEEM, AND RELATIONSHIP COMPARISON

Bivariate Correlations of Main Study Variables with General Self-Esteem, Social Self-Esteem, and Relationship Comparison

	Days per Week of SMU	Hours per Day of SMU	Passive Use	Active Use	SCO	RCSE	Baseline RS	Follow-Up RS
RSE	0.11**	-0.23**	0.05	-0.30**	-0.15**	-0.14**	0.40**	0.30**
RC	0.001	0.30**	-0.13**	0.57**	0.58**	0.23**	-0.36**	-0.26**
SSE	-0.03	0.11*	-0.19**	0.42**	0.05	0.02	0.11*	0.06

Note. *p ≤ .05, **p ≤ .01; RSE = Rosenberg Self-Esteem; RC = Relationship Comparison; SSE = Social Self-Esteem.

APPENDIX D

SIGNIFICANT DIFFERENCES ON STUDY VARIABLES BETWEEN PARTICIPANTS WHO COMPLETED FOLLOW-UP AND THOSE WHO DID NOT COMPLETE FOLLOW-UP

Significant Differences Between Participants Who Completed Follow-Up and Those Who Did Not

	Completed Follow-Up		**Did Not Complete Follow-Up**	
	M	***SD***	***M***	***SD***
Relationship Status	2.11	0.92	1.84	0.91
Relationship Length	1.98	0.82	1.71	0.81
Age	29.76	9.59	27.21	8.85
Education	4.28	1.28	3.96	1.36
Race/Ethnicity	2.44	1.43	2.01	1.28
Sexual Orientation	1.62	0.99	1.38	0.83
General Self-Esteem	3.17	0.73	3.39	0.73
Baseline RS	3.94	0.73	4.10	0.74

Note. A significant difference was found between the two samples on each of the variables listed in the table at $p < .05$. All study variables were tested; if the variable does not appear on this table, then the two groups did not significantly differ from one another on that respective variable.