

Gender Differences in Facebook Addiction as a Coping Response to Social Stressors and Poor Self-Confidence

Pamela Black^{1,*} and Helen M. Hendy²

¹*Department of Criminal Justice, Penn State University, Hazleton Campus, USA*

²*Department of Psychology, Penn State University, Schuylkill Campus, USA*

Abstract: The Threat Appraisal and Coping Theory suggests that when individuals perceive social stressors from important interpersonal relationships (family, friends, romance), and when they have poor self-confidence, they may display the coping behavior of seeking social support, including that provided by social media platforms such as Facebook. However, individuals who perceive intense social stressors and have poor self-confidence may use Facebook to the extent that it interferes with other areas of their lives. The present study examined this cognitive sequence that could lead to such Facebook addiction: SOCIAL STRESSORS → POOR SELF-CONFIDENCE → EXCESSIVE FACEBOOK. Because of past research showing gender differences in each of these variables, we hypothesized that women would be more likely to show the proposed cognitive sequence leading to Facebook addiction. Participants were 243 women and 209 men from a paid online Survey Monkey sample who reported demographics, three social stressors (family, friends, romance), self-confidence with Rosenberg's Self-Esteem Scale, and excessive Facebook use with the Bergen Facebook Addiction Scale. Unlike our hypothesized results, moderated mediational analyses with 5000 bootstrapped samples found significantly higher indirect effect sizes for the three-variable sequence in men than in women, specifically when the social stressor was from family or romantic partners. One interpretation would be that when conflicts occur in intimate personal relationships (family, romance), women may have a wider network of real-life relationships in which they share their emotional concerns, whereas men are more likely to rely on online social media to vent concerns about intimate relationships.

Keywords: Facebook, gender differences, social stressors, self-esteem, coping behavior.

INTRODUCTION

In October of 2023, the Washington Post (Lima and Nix) reported that forty-one states, as well as the District of Columbia, were suing Meta, owner of Facebook and Instagram, alleging that these social media platforms had built in addictive features that could harm children. The suit argued that Meta and its subsidiaries contribute to mental health issues, and use harmful and manipulative tactics to get children and young people hooked.

While the Diagnostic and Statistical Manual currently recognizes only one behavioral addiction (gambling), there has been, especially in recent years, a flurry of academic research on Facebook, and other social media, addiction, and especially on its effects on young people. Facebook addiction has been linked to depression (Alenezi *et al.* 2023; Sarker *et al.*) and sleep disturbance (Ho 2023; Ha *et al.* 2023). Some studies, for whatever reason, have focused exclusively on women (Akyildiz Munusturlar and Munusturlar, 2023; Alenezi *et al.* 2023). Some research has looked at Facebook addiction as a potential reaction to stress (Ho 2023). However, there is little research that compares the relationship between Facebook addiction

and stress between male and female users. Are men who are addicted to Facebook also experience more stress or are women? And, given the use of social media platforms, especially Facebook, as a means of presenting positive social relationships and family/friend events, does stress in interpersonal relationships lead to more compulsive use of Facebook, and are there differences between men and women? Graves (2021) compared males to females on perceived stress and coping among college students. She noted that females were significantly more likely to turn to distraction than males, to seek out emotional support and to seek out instrumental support. Males were more likely to vent. Additionally, females were more prone to emotion focused coping. While Graves did not specifically look at Facebook as a coping mechanism, it is reasonable to view Facebook as a means of distraction (take ones mind off ones problems), a way to find emotional support (in likes or comments) or in the case of males, vent (posting a rant on Facebook. This article looks more closely at the gendered differences in Facebook addiction, specifically comparing the roles of various types of stress on Facebook addiction, both directly and mediated through stress' effect on self-confidence.

The Threat Appraisal and Coping Theory suggests that when individuals perceive social stressors from important interpersonal relationships (family, friends, romance), and when they have poor self-confidence,

*Address correspondence to this author at the Penn State University, Hazleton Campus, 76 University Drive, Hazleton, PA 18202, USA; E-mail: pup1@psu.edu

they may display the coping behavior of seeking social support. The social media platform of Facebook is one source of social support that individuals may seek for distraction for their distress, for emotional venting, gaining information, and obtaining practical assistance (Acar 2008; David, Anthony, and Pauls 2015; Ellison, Steinfeld, and Lampe 2007; Lee, Dickson, Conley, and Holmbeck 2014; Martin *et al.* 2013; Steijn and Schouten 2013; Valenzuela 2013). However, Facebook use may also bring critical commentary and even harassment that can produce severe psychological damage and even suicide (Amichai-Hamburger 2013; Poland 2016; Sher and Vilens 2009), and individuals who spend excessive hours with Facebook may neglect life responsibilities and real-life relationships (Andreassen, Torsheim, Brunborg, and Pallesen 2012). Similarly, research has found conflicting results for the association between self-confidence and social media use, with some studies showing a positive relationship (Johnston *et al.* 2010; Whitman and Gottdiener 2015) and with other studies suggesting a negative relationship (Baturay and Toker 2016; Forest and Wood 2012; Kalpidou, Costin, and Morris 2011; Keating, Hendy, and Can 2016; Kross *et al.* 2013; Oh *et al.* 2014; Tazghini and Siedlecki 2013). Perhaps individuals with strong self-confidence to cope with social and other stressors in their lives only use Facebook infrequently and casually, but stressed individuals with poor self-confidence are at greater risk for over-dependence on Facebook for social support.

Past research provides support for the idea that social media platforms such as Facebook are used as a means of coping with various life stressors. For example, van Ingen and colleagues (2016) found that over 50% of their study participants reported coping with negative life experiences with online social activity, which was more positively associated with life satisfaction than were other coping strategies such as mental disengagement (e.g., puzzles and games). Similarly, online social networks were reported as a means of coping with work stressors by employees (Cohen and Richards 2015), with college stressors by students (Zhang 2017), with natural disaster stressors by typhoon victims (Eandoc and Takahasi 2016), with bereavement stressors by individuals who have lost loved ones (Blasko 2015), and with separation anxiety by children of military members deployed overseas (Rossetto *et al.* 2015).

Purpose of Present Study

The purpose of the present study was to provide the first examination of gender differences in the cognitive

sequence suggested by the Threat Appraisal and Coping Theory that could lead to overuse of the social media platform of Facebook:

SOCIAL STRESSORS → POOR SELF-CONFIDENCE
→ FACEBOOK ADDICTION.

Based on past research findings for some of its component variables, women may be at greater risk for showing this sequence of events in response to social stressors from important interpersonal relationships in their lives (family, friends, romance). For example, women's self-confidence tends to be more associated with the quality of their relationships than is typically found for men (Chui and Wong 2016)). Also, women with low self-confidence are more likely than men to seek social support (Taylor 2002). Finally, women are more likely than men to use Facebook (Oberst *et al.* 2015), and to show negative associations between self-confidence and Facebook experiences (Frison and Eggermont 2016). Our hypothesis was that for all three sources of social stressors (family, friends, romance), the three-variable sequence shown above would be moderated by gender, with stronger indirect effect sizes for women than for men.

METHODS

Participants and Procedures

Study participants included adults recruited through a paid Survey Monkey quota sample (www.surveymonkey.com) of thousands of individuals nationwide who have ever completed their website surveys on a variety of topics. Participants receive a \$0.50 donation to the charity of their choice as compensation for participation. To increase the likelihood that study participants complete the survey, Survey Monkey requires that researchers limit surveys to 50 or fewer questions. Unfortunately, a response rate is not provided by Survey Monkey. The sample is drawn by Survey Monkey from its pool of approximately three million U.S. panelists, attempting to match national demographics. However, research suggests that Survey monkey samples skew older, more urban, higher income, and more Caucasian in reported ethnicity than for U.S. Census data (Heen, Lieverman and Miethe 2014). Of the 518 individuals who responded to the anonymous survey, 452 (87.3%) completed measures of all study variables that included Facebook addiction, self-confidence, and social stressors from family, friends, and romantic partners (53.8% female; 19.7% under 30 years of age, 27.4%

30-44 years of age, 25.2% 45-59 years of age, 27.7% 60 and older). However, as noted by Heen *et al.* (2014), when compared to Amazon Mechanical Turk Survey Monkey provides the most representative samples in the United States. Table 1 shows descriptive statistics for men and women of the present sample.

Table 1: Demographics for Present Sample of 243 Women and 209 Men

VARIABLE	WOMEN %	MEN %
AGE		
18-29 years	21.89%	17.2%
30-44 years	25.1%	30.1%
45-60 years	24.7%	25.8%
60+ years	28.4%	26.8%
INCOME		
< \$25K	16.9%	15.3%
\$25K < \$50K	17.3%	22.0%
\$50K < \$75K	15.6%	14.4%
\$75K < \$100K	7.4%	12.0%
\$100K < \$125K	9.9%	12.4%
\$125K < \$150K	5.3%	4.8%
\$150K < \$175K	2.5%	2.9%
\$175K+	4.5%	6.6%
REGION		
New England	5.4%	3.9%
Middle Atlantic	11.6%	8.3%
East North Central	10.8%	17.6%
West North Central	10.4%	10.2%
South Atlantic	14.9%	16.1%
East South Central	4.1%	5.4%
West South Central	14.5%	11.2%
Mountain	8.7%	9.8%
Pacific	19.5%	17.6%

Measurement

Social stressors from family, friends, and romantic partners were each measured with five “reversed” items from the original 23-item Social Support from Family and Friend Scale (Procidano and Heller 1983), with these five items reflecting perceptions of being badly treated by people in close personal relationships. The five items included “when they are nice to me, I wonder what they want,” “they are rude to me unless I

insist on respect,” “when I confide in them, it makes me uncomfortable,” “they seem to like to make me mad,” and “I wish this relationship was much different than it is.” For each relationship (family, friends, romance), participants were asked to use a five-point rating to report how often they agreed with each statement during the past year (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). The score for social stressors from each type of relationship was calculated as the mean five-point rating for the five scale items. For family stressors, Cronbach’s $\alpha = .84$ for men, $.79$ for women. For friend stressors, Cronbach’s $\alpha = .82$ for men, $.79$ for women. For romance stressors, Cronbach’s $\alpha = .86$ for men, $.88$ for women.

Self-confidence was measured with the 10-item Rosenberg Self-Esteem Scale (Rosenberg 1965), for which participants used a five-point rating (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always) to report how often they agreed with each statement during the past year. The scale measures the individual’s self-respect and self-confidence. Items included in the scale are “I am able to do things as well as most people,” “I wish I could have more respect for myself” (reversed), “I do not have much to be proud of” (reversed). After ratings for “reversed” items were revised (1 = 5, 2 = 4, 3 = 3, 4 = 2, 5 = 1), the score for self-esteem was calculated as the mean five-point rating for the 10 scale items. For this measure of self-confidence, Cronbach’s $\alpha = .92$ for men, $.90$ for women.

Facebook addiction was measured with the 18-item Bergen Facebook Addiction Scale (Andreassen *et al.* 2012), for which participants used a five-point rating (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always) to report how often they agreed with each statement during the past year. Scale items included “I spent a lot of time thinking about Facebook or planned use of Facebook,” “I used Facebook in order to forget about personal problems,” “I became irritable if prohibited from using Facebook,” and “I ignored my romantic partner, family members, or friends because of Facebook.” The score for Facebook addiction was calculated as the mean five-point rating for the 18 scale items. For this measure of Facebook addiction, Cronbach’s $\alpha = .94$ for men, $.96$ for women.

Data Analysis

The first goal of data analysis in the present study was to examine the significance of the three variable sequence suggested by Threat Appraisal and Coping

Theory that could lead to Facebook addiction in U.S. men and women:

SOCIAL STRESSOR → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION.

We used the steps of mediational analysis suggested by Preacher and Hayes (2004), separately for each gender, and separately for each source of social stressor (family, friends, romance). Using SPSS 24 software and bivariate Pearson correlation, we examined whether each social stressor (family, friends, romance) was associated with poor self-confidence in men and in women (see Tables 2 and 3). Next, we used SPSS 24 software and bivariate Pearson correlation to examine whether poor self-confidence was associated with Facebook addiction in men and in women (see Tables 2 and 3). Finally, for significant associations found above, we used SPSS 24 software and an SPSS macro from Preacher and Hayes (2004) to conduct bootstrapping mediational analysis for the three-variable sequence in men and in women. For

each of these analyses, the social stressor was considered as the predictor, self-confidence was considered as the mediator, and Facebook addiction was considered as the outcome. The macro drew 5000 bootstrapped (replaced and re-drawn) samples from the data provided (by 243 men, 209 women) and calculated for each sample the *indirect effect* of the predictor on the outcome via the mediator. The macro then applied a 95% confidence interval to the distribution of these *effect sizes* for these 5000 samples to determine that they did *not* include the value of .00 (meaning *no effect*), which indicated statistical significance for the three-variable sequence (with $p < .05$) (see Table 4).

The second goal of data analysis was to determine whether gender moderated the three-variable sequence examined (SOCIAL STRESSOR → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION). We again used SPSS 24 software and the SPSS macro from Preacher and Hayes (2004) to conduct bootstrapping moderated mediational analysis. For

Table 2: Bivariate Correlations of Study Variables for 243 U.S. Women

	FAMILY STRESSORS	FRIEND STRESSORS	ROMANCE STRESSORS	SELF CONFIDENCE	FACEBOOK OVERUSE
FAMILY STRESSORS		.473***	.301***	-.284***	.261***
FRIEND STRESSORS			.378***	-.236***	.270***
ROMANCE STRESSORS				-.146*	.171*
SELF-CONFIDENCE					-.262***
FACEBOOK OVERUSE					

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

Table 3: Bivariate Correlations of Study Variables for 209 U.S. Men.

	FAMILY STRESSORS	FRIEND STRESSORS	ROMANCE STRESSORS	SELF CONFIDENCE	FACEBOOK OVERUSE
FAMILY STRESSORS		.629***	.530***	-.476***	.343***
FRIEND STRESSORS			.510***	-.338***	.419***
ROMANCE STRESSORS				-.352***	.346***
SELF-CONFIDENCE					-.336***
FACEBOOK OVERUSE					

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

Table 4: Separately for 243 Women and 209 Men, Results from 5000 Bootstrapped Samples to Examine the Indirect Variable Sequence of SOCIAL STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION

WOMEN			
MEDIATION INDIRECT EFFECT EXAMINED	Indirect Effect	Boot SE	Bias-Corrected 95% CI (Lower to Upper)
FAMILY STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0346	.0123	(.0163 to .0663)*
FRIEND STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0368	.0152	(.0146 to .0780)*
ROMANCE STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0217	.0121	(.0031 to .0524)*
MEN			
MEDIATION INDIRECT EFFECT EXAMINED	Indirect Effect	Boot SE	Bias-Corrected 95% CI (Lower to Upper)
FAMILY STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0890	.0313	(.0362 to .1615)*
FRIEND STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0681	.0252	(.0291 to .1310)*
ROMANCE STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0656	.0228	(.0310 to .1236)*

* $p < .05$.

each of these analyses, the social stressor was considered as the predictor, self-confidence was considered as the mediator, and Facebook addiction was considered as the outcome, with gender considered as the moderator using effect coding (0 = female, 1 = male). The macro again drew 5000 bootstrapped (replaced and re-drawn) samples from the data provided (by the 243 men and 209 women) and calculated *interaction effects* between gender and the three-variable sequence. The macro then applied a 95% confidence interval to the distribution of these *effect sizes* for the 5000 bootstrapped samples to determine that they did *not* include the value of .00 (meaning *no effect*), which indicated statistical significance for gender as a moderator of the three-variable sequence (with $p < .05$) (see Table 5).

RESULTS

For both subsets of 243 women and 209 men in the present sample, bivariate correlations found significant associations between all three social stressors (family, friends, romance) and poor self-confidence (see Tables 2 and 3). For both men and women, bivariate

correlations also found significant associations between poor self-confidence and overuse of Facebook (see Tables 2 and 3). Then, for both men and women, 5000 bootstrapped samples and a 95% confidence interval revealed that poor self-confidence was a significant mediating variable between each social stressor (family, friends, romance) and Facebook addiction, supporting the three-variable sequence for both men and women: SOCIAL STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION (see Table 4).

However, gender was found to be a significant moderator of this three-variable sequence for family and romance stressors, but not for friend stressors (see Table 5) with significantly higher indirect effects for men than for women. For example, for the three-variable sequence of FAMILY STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION, the indirect effect for men was .0890 and .0346 for women (see Table 4). For the three-variable sequence of ROMANCE STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION, the indirect effect for men was .0656 and .0217 for women (see Table 4).

Table 5: Results from 5000 Bootstrapped Samples to Examine Whether Gender Moderated the Variable Sequence of SOCIAL STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION

	Index of Moderation	Boot SE	Bias-Corrected 95% CI (Lower to Upper)
FAMILY STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0345	.0155	(.0092 to .0711)*
FRIEND STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0190	.0188	(-.0188 to .0603)
ROMANCE STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION	.0371	.0196	(.0031 to .0823)*

* $p < .05$.

DISCUSSION

For a small nationwide sample of U.S. men and women, the present study examined the cognitive sequence of events proposed by the Threat Appraisal and Coping Theory (Lazarus and Folkman 1984) that would lead to the coping behavior of seeking social support on Facebook. The theory suggests that (first) if an individual perceived his/her social stressors in important relationships to be intense, and (second) if he/she has poor self-confidence or respect in his/her abilities to handle things “as well as most people,” the individual would be more likely to reach out the social support offered by Facebook (for emotional venting, information, practical assistance), but even to the point of neglecting life responsibilities. For all three sources of social stressors examined (family, friends, romance), and for both men and women, the steps of bootstrapping mediational analysis recommended by Preacher and Hayes (2004) found support for this proposed variable sequence: SOCIAL STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION. Besides neglecting responsibilities, overuse of Facebook may increase the probability that the person receives critical commentary that lays blame for interpersonal problems on himself/herself, or that the person views idealized images of other people’s social lives that actually *worsens* the person’s perceptions of his/her own social stressors (Kalpidou *et al.* 2011; Keating *et al.* 2016; Oh *et al.* 2014; Tazghini and Siedlecki 2013).

We had hypothesized that if gender differences appeared in the variable sequence examined (above), then our moderated mediational analysis would reveal women as showing stronger patterns of poor self-confidence mediating associations between social stressors and Facebook addiction. This hypothesis was based on past research showing that women’s self-confidence is more strongly associated with the quality of their interpersonal relationships than is typically found for men (Chui and Wong 2016), that women with low self-confidence are more likely than men to seek social support (Taylor 2002), and that women are more likely than men to use Facebook (Oberst *et al.* 2015). Instead, our moderated mediational analyses found the sequence stronger for men than for women, particularly when it came to social stressors from family and romantic partners (Table 5). One interpretation for men being more likely to overuse Facebook when feeling low confidence in the face of social stressors may be that women tend to have a wider network than men for real-life relationships in which they can confide their

emotional experiences (Frison and Eggermont 2016), so perhaps women do not need Facebook as much for social support. Additionally, this pattern of men seeking social support from Facebook may be particularly likely when experiencing stress from more intimate relationships (such as family and romantic partners) than from less intimate relationships (friends).

STUDY LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

One limitation of the present study was that the survey methodology relies upon self-report for all variables examined. Even when anonymous, social desirability effects may exist that prompt individuals to portray themselves or their relationships in a more positive light than they actually perceive them to be. Another limitation is that the survey methodology allows conclusions about *correlations* among variables, rather than conclusions about the *causal sequence* of these variables. For example, although social stressors from close relationships may prompt individuals to doubt themselves and then to reach out to Facebook for support, it may also be that excessive time on Facebook causes the person to neglect life responsibilities (at home, at work), which prompts self-doubt and complaints from family, friends, and romantic partners. Future research could longitudinally investigate the sequence of social stressors, self-confidence, and Facebook use to confirm the variable sequence we propose:

SOCIAL STRESSORS → POOR SELF-CONFIDENCE → FACEBOOK ADDICTION.

Future research could also investigate the specifics of Facebook commentary, both sent and received, that are most associated with damage to an individual’s self-confidence, so that Facebook users can have a better idea of when they are giving too much information (“TMI”), and when they should unfriend someone, whose comments are toxic to them.

The results of this study may also have implications for policymakers and mental health professionals. As mentioned earlier, Facebook and Mark Zuckerberg are under increasing scrutiny over the algorithms that apparently make Facebook and Instagram more appealing and more addictive to children. Policy makers are investigating these allegations, and it is possible that the concern over childhood social media addiction will spill over into adult social media addiction, and particularly its mental health consequences. And, as noted by Graves, women are

more likely to cope through avoidance and looking for emotional support, while men are more likely to cope by venting. If any of these coping mechanisms manifest themselves as Facebook addiction, mental health professionals must not adopt a one-size fits all model of addressing this form of behavioral addiction. Instead, they will need to address the different coping styles of their male and female clients, and treat accordingly.

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