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Fear of missing out (FOMO) is a relatively new concept, however researchers have found that FOMO and social media use cause negative aspects of well-being, such as depression, anxiety, stress (Alabi, 2013; Alavi, 2011) and lack of academic motivation (Jacobsen and Forste, 2011). When using a correlational design, the current study examined the associations between social media engagement and negative aspects of well-being, while also examining the mediating role of FOMO between these variables. Participants (198 college students, M = 19 years old, 86 percent female, 74 percent Caucasian) completed online surveys, where participants reported on their levels of social media engagement (Alt, 2015), FOMO (Przybylski, 2013), depression, anxiety, stress (Antony, 1998), and academic motivation (Lockwood, 2002). Findings indicated that FOMO was a significant mediator for the associations between social media engagement and anxiety and stress. However, FOMO did not seem to mediate the relationship between social media engagement and depression and academic motivation. These findings supported previous research claiming that social media use can have negative effects on well-being (Alabi, 2013; Alavi et al., 2011); however, experimental research is needed to better understand the causation of these negative effects.

Keywords: social media, FOMO, depression, anxiety, stress

Casey McAndrew graduated from Coastal Carolina University in May 2018. She researched the phenomenon of FOMO for her senior thesis. This paper was undertaken for her Applied Research Psychology course in Fall 2017.

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Social media usage has increased drastically throughout the last decade (Baker, Krieger & LeRoy, 2016), with smartphones making access to social media easier than ever before (Lepp, Barkley & Karpinski, 2014). Although social media use has potential benefits, some have questioned whether social media has more negative effects than positive effects (Baker et al., 2016). For example, social media usage can lead to negative mental health outcomes (Alabi, 2013; Alavi et al., 2011) and deficits in academic motivation (Jacobsen & Forste, 2011). It is important to explore further the relationship of social media to these negative outcomes because recently researchers have found that fear of missing out (FOMO) might bring about the relationship between social media engagement and the negative outcomes (Przybylski et al., 2013). The current study was conducted to begin to address this issue by exploring the significance that FOMO has on the relationship between social media use and negative aspects of well-being.

FOMO is defined as a constant feeling that others may be having positive experiences where one is not present; as a result of this feeling, one would want to stay involved with what others are doing (Przybylski et al., 2013). FOMO was derived from the self-determination theory that claimed psychological health depended on three things: competence (the ability to understand and adjust to the world), autonomy (having control over one's actions and decisions), and relatedness (having close associations with others). FOMO was thought to occur as a result of the lack of satisfaction with these psychological needs (Deci & Ryan, 2008).

Although FOMO is a relatively new phenomenon (Przybylski et al., 2013), it has been found to be related to social media engagement (Alt, 2015). This is most likely because FOMO is a personality construct involving the unwillingness to be excluded from important information and events. Social media is a way for people to let their friends and family know what they are doing, yet most of the time people share only the positive aspects of their lives. Other people can experience

FOMO or general feelings of unhappiness when they see others engage in positive activities of which they are not a part (Przybylski et al., 2013).

Researchers have found that social media engagement is related to higher levels of depression and anxiety (Alabi, 2013; Alavi et al., 2011) and that FOMO might play a key role in mediating these relationships (Przybylski et al., 2013). When people are only portraying the positive aspects of their lives, it can make others feel as if their own lives do not live up to the lives of people they see on social media (Wortham, 2011). People start to experience FOMO when they constantly see their friends together on social media and they are not included. This feeling of not being included can lead to depression and anxiety because these people do not feel that they are important enough to be included (Alabi, 2013; Alavi et al., 2011).

Previous research suggests that social media and FOMO are related to stress and a lack of academic motivation (Jacobsen & Forste, 2011). Researchers indicated that the more time a person spends using social media, the less time he or she will spend studying and working on academics (Kirschner & Karpinski, 2010). As explained previously, people may be using social media to combat that feeling of FOMO and stay connected. This can cause stress (Gemmil & Peterson, 2006); grades and academic performance are more likely to suffer because of their social media use and FOMO (Kirschner & Karpinski, 2010).

In the current study, it was hypothesized that social media engagement would be positively correlated with negative aspects of well-being such as depression, anxiety, and stress. It was also expected that social media engagement would be negatively correlated with academic motivation. In addition to those two hypotheses, it was expected that FOMO would mediate the relationships between social media engagement, negative aspects of well-being and lack of academic motivation. To explore these hypotheses, students were asked to report on their social media usage; levels of FOMO; and on their levels of depression, anxiety, stress, and academic motivation. This study

advanced previous research by exploring the importance of FOMO when it comes to the relationships between social media engagement, negative aspects of well-being and lack of academic motivation.

Method

Participants

Undergraduate students from a mid-sized university in the southeast were invited to participate in this online study through Sona Systems. Professors in upper-level psychology courses often encourage participation in psychological studies by offering extra credit for completing surveys on Sona Systems. This provides a pool of participants that will be utilized for the current study. The sample consisted of 198. Of these 198 participants, 86 percent were female and 14 percent were male with ages ranging from 18 to 28 years (M = 19 years, SD = 1.34). Most of the participants in this study were white/Caucasian (74 percent), followed by African- American (16 percent), Hispanic/Latino (2.5 percent), Asian/Pacific Islander (1 percent) and multi-race accounting for 7 percent of the sample.

Measures

Social Media Engagement. To measure social media engagement, participants completed the 10-item Social Media Engagement Questionnaire (Alt, 2015). This questionnaire has one four-item social engagement subscale and two three-item subscales: a news information engagement subscale and a commercial information engagement subscale. Participants were shown a list of behaviors such as "updating personal information in social media sites" describing how one might engage in social media. Participants were then asked to respond to these items on a five- item response scale ranging from 1 = "Never" to 5 = "Always." For each participant, the mean of each participant's responses to the items composing each subscale was calculated. Then the mean of all

three-subscale means was calculated, giving each participant a composite score of social media engagement. The internal reliability for this variable was high ($\alpha = .82$).

Fear of Missing Out. Participants completed the Fear of Missing Out Scale (Przybylski et al., 2013) to measure their fear of missing out. This ten-item scale measured the fears and worries of being detached from things that are occurring within the social world (e.g., "I get worried when I find out my friends are having fun without me"). Participants then responded to these items on a five-item scale ranging from 1 = "Not at all true of me" to 5 = "Extremely true of me." Composite fear of missing out scores were created by calculating the mean of each participant's scores for items on the scale. The internal reliability for FOMO was good with a Cronbach's alpha of .87.

Depression. Participants completed the depression subscale of the 21-item Depression, Anxiety, and Stress Scale (Antony et al., 1998). This subscale (seven items) measured behaviors that indicated lack of self-worth and lowered overall mood (e.g., "I felt I was not worth much as a person"). Participants responded to these items on a four-point scale ranging from 0 = "Did not apply to me at all" to 3 = "Applied to me very much" (Oei, Sawang, Goh, & Mukhtar, 2013). Composite depression scores were determined by calculating the mean of each participant's scores on the subscale items. The internal reliability of the depression variable is good ($\alpha = .91$).

Anxiety. Participants completed the anxiety subscale of the 21-item Depression, Anxiety, and Stress Scale (Antony et al., 1998). This subscale (seven items) measured behaviors that demonstrated fear and expectation of negative situations (e.g., "I was worried about situations in which I might panic and make a fool of myself"). One item on this subscale was revised to make the wording more appropriate for participants. Participants responded to these items on a four-point scale ranging from 0 = "Did not apply to me at all" to 3 = "Applied to me very much" (Oei et al., 2013). Composite anxiety scores were determined by calculating the mean of each participant's scores on the subscale items. The internal reliability for anxiety was high ($\alpha = .85$).

Stress. Participants completed the stress subscale of the 21-item Depression, Anxiety and Stress Scale (Antony et al., 1998). This subscale (seven items) measured behaviors that caused physical and mental pressure to participants (e.g., "I found myself getting agitated"). One item on this subscale was revised to make the wording more appropriate for participants. Participants responded to these items on a four-point scale ranging from 0 = "Did not apply to me at all" to 3 = "Applied to me very much" (Oei et al., 2013). Composite stress scores were determined by calculating the mean of each participant's scores on the subscale items. The internal reliability for stress was good with a Cronbach's alpha of .85.

Academic Motivation. Participants completed the 14-item Academic Motivation Scale (Lockwood et al., 2002). This scale measured ways in which participants are dedicated and committed to do well in college (e.g, "I plan to put more time into my schoolwork"). Participants will respond to these items on an 11-point scale with endpoints labeled 1 = "Not at all true" and 11 = "Very true." Composite academic motivation scores were determined by calculating the mean of each participant's scores for the items on the scale. The internal reliability of academic motivation was high (α = .91).

Procedure

Data for this study were collected individually using an online software program called Sona Systems. This was a correlational study measuring the relationships between social media, well-being and academic motivation, with the mediating variable being FOMO. The 55-item survey took participants approximately 15 minutes to complete.

Results

In this study, participants reported only "sometimes" engaging in social media related behaviors (*M* = 2.93, *SD* = .64) using a five-point scale ranging from 1 to 5. On average, participants reported moderate amounts of FOMO (M = 2.52, SD = .79) which was measured on a five-point scale ranging from 1 to 5. When asked about personal well-being, participants reported low to moderate amounts of depression (*M* = .92, *SD* = .80) and anxiety (*M* = .92, *SD* = .73), and moderate amounts of stress (*M* = 1.24, *SD* = .73), which were all measured on a four-point scale ranging from 0 to 3. Alternatively, participants reported moderately high levels of academic motivation (*M* = 8.33, *SD* = 1.66) on an eleven-point scale ranging from 1-11 (See Table 1).

Table 1

Means and Standard Deviations of all Variables

	Mean (SD)
Social Media Engagement	2.93 (.64)
Fear of Missing Out	2.52 (.79)
Depression	.92 (.80)
Anxiety	.92 (.73)
Stress	1.24 (.73)
Academic Motivation	8.33 (1.66)

In order to examine whether FOMO mediated the association between social media use and depression, the first step was to determine if social media use was associated with depression. Unexpectedly, social media use was only marginally, significantly related to depression $\beta = .14$, $p = .05$ (See Table 2), therefore the mediation of FOMO was not possible.

Table 2

Correlations Between Social Media Engagement, FOMO, and Negative Aspects of Well-Being

	1	2	3	4	5
1. Social Media Engagement	-				
2. Fear of Missing Out	.41***	-			
3. Depression	.14	.44***	-		
4. Anxiety	.27***	.46***	.75***	-	
5. Stress	.24***	.49***	.74***	.80***	-
6. Academic Motivation	.23***	-.02	-.03	.02	.01

Note. ** = $p < .01$. *** = $p < .001$.

Results of the multiple regression analyses examining whether FOMO mediated the association between social media use and anxiety, indicated that as expected, social media engagement was significantly related to more anxiety $\beta = .27, p < .001$ (See Figure 1). Separate multiple regression analyses indicated that social media use was also associated with more FOMO ($\beta = .41, p < .001$) and that FOMO was significantly related to more anxiety ($\beta = .46, p < .001$). Thus, mediation was possible, and a final multiple regression analysis was conducted. In this regression, both social media use and FOMO were entered as predictors and anxiety was included as the criterion variable. Findings from this analysis indicated that when FOMO was accounted for, the relationship between social media engagement and anxiety was no longer significant, meaning social media was related to anxiety only insofar as FOMO was existent (See Figure 1).

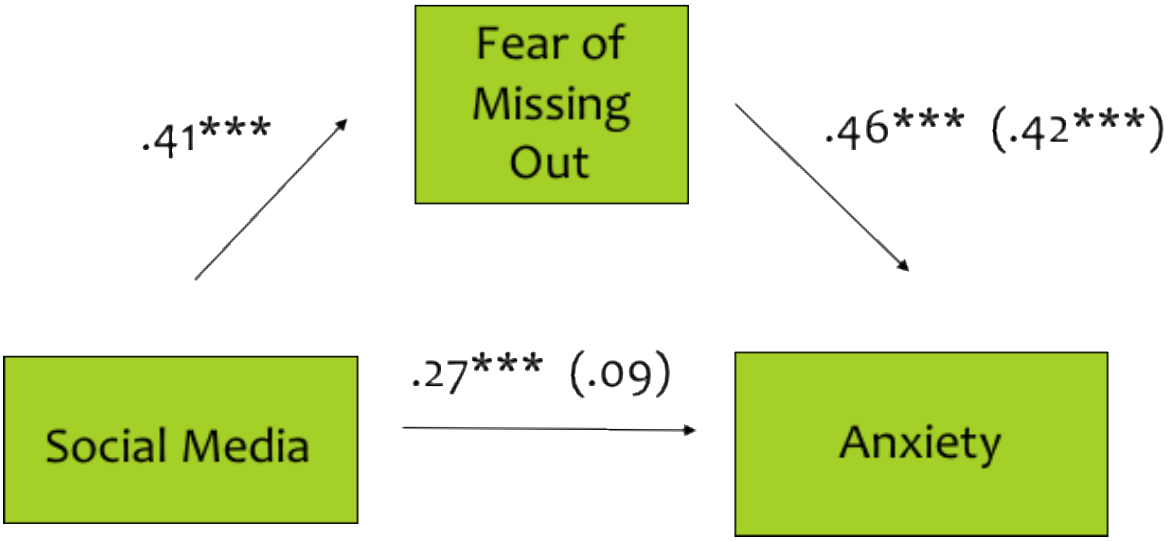

Figure 1. Standardized regression coefficients for the relationship between social media engagement and anxiety when mediated by fear of missing out. Beta coefficients for regressions using all three variables are in parenthesis.
Note. *** = $p < .001$).

In order to examine whether FOMO mediated the relationship between social media use and stress, the first step was to determine if social media use was associated with stress. Consistent with expectations, social media engagement was significantly associated with more stress $\beta = .24$, $p = .001$ (See Figure 2). Separate multiple regression analyses indicated that social media use was also associated with more FOMO ($\beta = .41, p < .001$) and that FOMO was significantly related to more stress ($\beta = .49, p < .001$). Because mediation was possible, a final multiple regression analysis was conducted. In this regression, both social media use and FOMO were entered as predictors and stress was included as the criterion variable. Findings from this analysis indicated that when FOMO was accounted for, the relationship between social media engagement and stress was no longer significant, meaning social media was related to stress only insofar as FOMO was existent (See Figure 2).

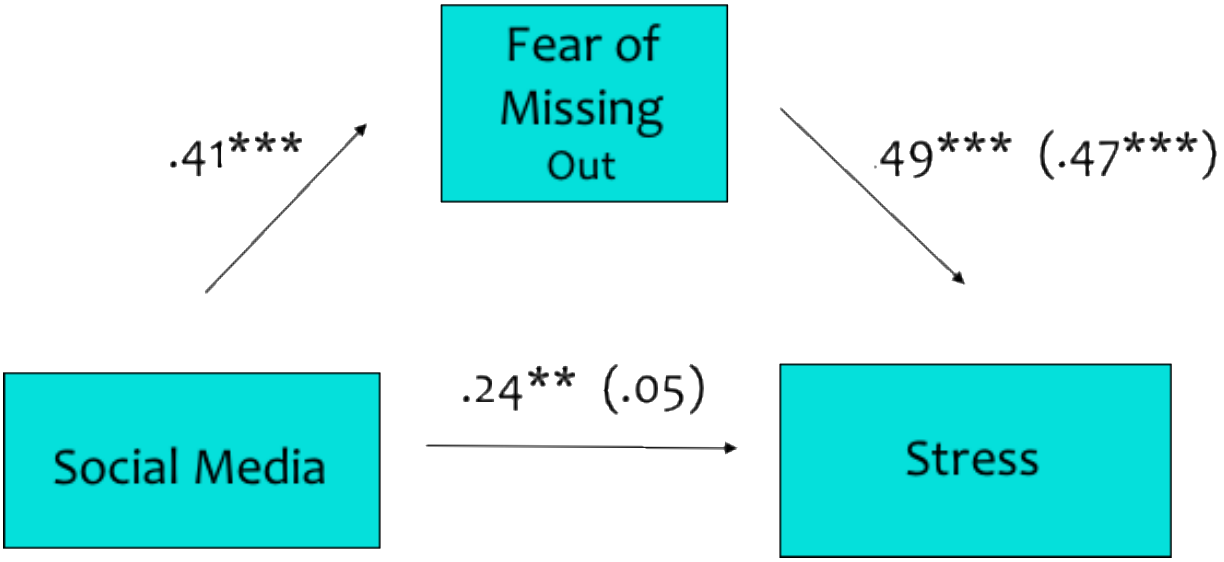

Figure 2. Standardized regression coefficients for the relationship between social media engagement and stress when mediated by fear of missing out. Beta coefficients for regressions using all three variables are in parenthesis.
Note. ** = $p < .01$. *** = $p < .001$.

The last multiple regression analysis examined whether FOMO mediated the relationship between social media use and academic motivation. Results indicated that, unexpectedly, social media was significantly associated to more academic motivation $\beta = .23$, $p = .001$ (See Figure 3). Separate multiple regression analyses indicated that social media use was also associated with more FOMO ($\beta = .41$, $p = < .001$), however there was no significant association between FOMO and academic motivation ($\beta = -.02$, $p = .78$). Because of these results, mediation was not possible.

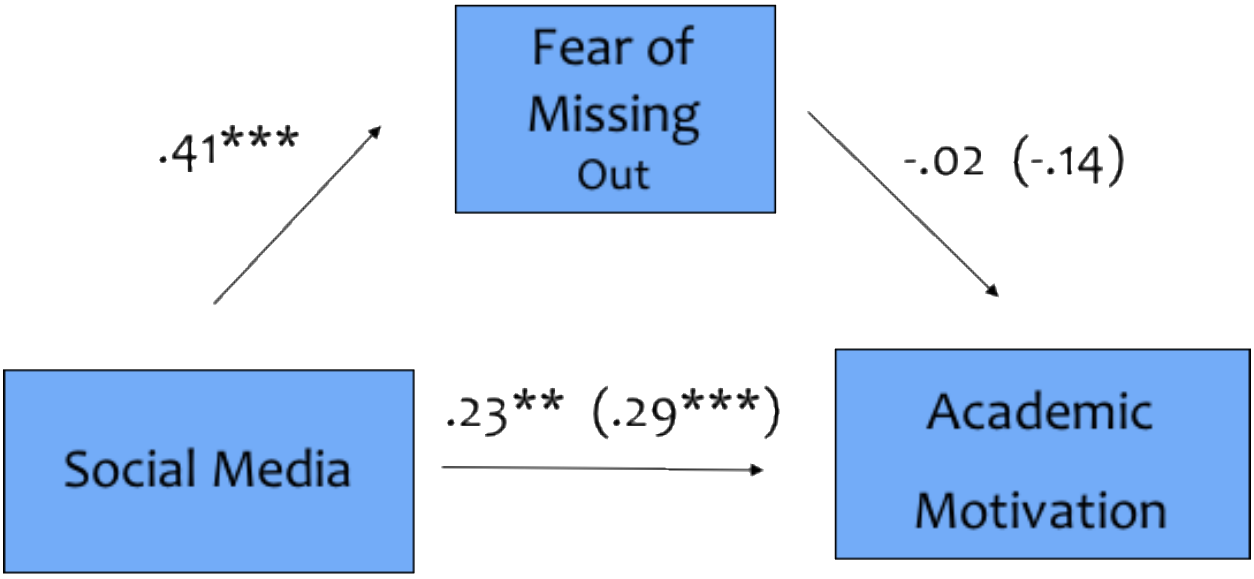

Figure 3. Standardized regression coefficients for the relationship between social media engagement and academic motivation when mediated by fear of missing out. Beta coefficients for regressions using all three variables are in parenthesis.
Note. ** = $p < .01$. *** = $p < .001$.

Discussion

As expected, results indicated that the more a person engages in social media, the more likely the person is to experience stress and anxiety. These findings are consistent with current literature claiming that social media may cause distractions and take up time in which a student could be doing other things, which could also lead to stress (Gemmill & Peterson, 2006). The association between social media engagement and anxiety may be due to the fact that people feel that their own lives do not live up to the lives they constantly see on social media. This feeling may make people anxious that other people have made better decisions in life than they have (Wortham, 2011). Consistent with expectations, it was found that FOMO better accounted for anxiety and stress than did social media engagement. These findings are consistent with previous research which has indicated that higher levels of FOMO are associated with higher levels of depression and worsened general mood (Baker et al., 2016; Przybylski, 2013).

Inconsistent with expectations, higher levels of social media engagement were not significantly associated with higher levels of depression. This finding was inconsistent with previous research indicating that social media use was associated with higher levels of depression (Blease, 2015; Pantic et al., 2012). However, the results showed that the association between social media engagement and depression was marginally significant; therefore, these findings are not completely inconsistent with previous research. Findings also indicated that FOMO was significantly associated with more symptoms of depression.

Another unexpected finding indicated that the more time people spent using social media, the more they reported being academically motivated. Previous findings have indicated that trying to engage in social media while doing homework or in class can be distracting, which in turn has a negative effect on one's academic motivation and performance (Jacobsen & Forste, 2011). Also inconsistent with expectations, findings indicated that FOMO was not a mediating variable between the association of social media engagement and academic motivation. Inconsistent with these findings, research has shown that FOMO was related to less mindful attention (Baker et al., 2016), decreased personal motivation (Alt, 2015), as well as poor academic achievement (Filippou, Cheong & Cheong, 2014). This finding could indicate that more competitive people are more academically and socially motivated, meaning they are motivated to keep up with their academics as well as their peers on social media. Another explanation for this finding could be that people are motivated to do better academically when they see others succeeding academically on social media. This inconsistency could also be due to participant's misinterpretation of questions or their lack of truthfulness in responding to these questions. Some participants may have responded to items with the belief that they are, or want to become, academically motivated, when in reality this is false.

There are some limitations that must be accounted for when interpreting the current findings. First, the study design was cross-sectional, and longitudinal designs are needed to

completely test mediation. Additionally, the sample was mostly female, Caucasian, college students. Most college students are part of the younger generation who grew up with social media and are more likely to use it. If the study sampled an older generation there may have been different results because not only do older adults use social media less, but they have a better sense of their identities. This might make them less susceptible to experience FOMO as a result of social media use. This homogeneous sample makes it hard to generalize the findings to other groups.

Future research should employ experimental and longitudinal designs to more adequately test the mediation hypotheses explored in this study. This research should also include a more diverse sample. Additionally, the present study examined FOMO in relationship with negative aspects of well-being. Future research should examine FOMO in relationship with different personality constructs, such as the Big 5 (Poropat, 2009), to determine if a specific personality type is more or less susceptible to experiencing FOMO. Fourth, a survey was used to collect data from participants in the current study. With online survey collection, it is always a concern that participants may not fully understand the question or they may not always tell the truth. Thus, future research should attempt to replicate these findings by using different methods of data collection such as personal interviews or experimental designs.

Although these limitations are important to consider, the current findings add to the current literature on the links between social media use, FOMO and adjustment. For instance, the current findings replicated previous findings which have indicated that social media use is related to higher levels of anxiety and stress and that FOMO mediates those relationships (Alabi, 2013; Alavi et al., 2011). The results of the current study indicated that social media use was associated with higher levels of academic motivation, which suggests that this association is more complicated than once thought. These findings emphasize the need for future research on social media use and its effects because social media may be more beneficial than people assume.

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