



Social media addiction and psychological adjustment: religiosity and spirituality in the age of social media

Meghan Wood, Hayden Center and Stacy C. Parenteau

Department of Psychology, Auburn University at Montgomery, Montgomery, AL, USA

ABSTRACT

Previous research indicates a significant association between social media use and psychological adjustment. The present study investigated whether religiosity/spirituality mediates the relationship between social media intrusion and psychological adjustment. Participants completed a demographic questionnaire, Religious Commitment Inventory-10, Spirituality Index of Well-Being, the DASS-21 Scales, and the Facebook Intrusion Questionnaire, which was altered slightly to include all types of social media. Results revealed that social media intrusion was significantly positively associated with depression, anxiety, and stress, and negatively correlated with spiritual well-being and the self-efficacy component of spiritual well-being. Furthermore, the self-efficacy dimension of spiritual well-being partially mediated the association between social media intrusion and psychological stress. From these results, it may be inferred that higher social media intrusion may have the ability to decrease specific aspects of spirituality, which may, in turn, negatively impact psychological adjustment. Limitations and future directions are discussed.

ARTICLE HISTORY

Received 27 August 2016

Accepted 22 February 2017

KEYWORDS

Social media; religious commitment; spirituality; psychological adjustment

Introduction

The role of social media and its effects on well-being have been researched by academics in the social sciences for a little over a decade (Labrague, 2014; Verduyn et al., 2015). For researchers to better understand the relationship between social media use and psychological adjustment, more studies need to examine variables that may explain this association. Very little attention has been paid to the role of religion as a mediating variable in the relationship between social media and psychological outcomes. It has been estimated that over 85% of college and university students use Facebook (Arrington, 2005). Furthermore, recent studies have found that the millennial generation, more than any previous generation, is less likely to endorse a specific religious affiliation (Pew Research Center, 2015). This study determined if religious commitment and spiritual well-being mediate the association between Facebook (and other social media) intrusion and psychological adjustment.

Social media and psychological adjustment

Since the inception of Facebook in 2004, research has examined the potential effects of the social media site on mental health and well-being. Elphinston and Noller (2011)

define Facebook intrusion as an inordinate attachment to Facebook, and developed the Facebook Intrusion Questionnaire using Brown's (1997) behavioural addictions criteria as a conceptual framework. Indices of Facebook intrusion include thinking about Facebook when not using it (cognitive salience), becoming distressed when not being able to access Facebook (withdrawal), and being unable to reduce Facebook use (relapse and reinstatement) (Elphinston & Noller, 2011).

A growing body of research has established an association between Facebook use and negative mental health outcomes. In this regard, it has been found that time spent online, but not intensity of Facebook use, is significantly associated with depression and anxiety (Labrague, 2014). Furthermore, passive social media use, defined as browsing Facebook, scrolling through newsfeeds, looking at friends' pictures and pages, etc., leads to a decline in affective well-being over time (Verduyn et al., 2015). Blease (2015) postulates that it is necessary to specify the nature of online interactions in order to better understand the relationships between psychological adjustment and Facebook use. The present study attempts to address this issue by examining Facebook (and other social media) intrusion (Elphinston & Noller, 2011) as an index of social media use. It has been found that Facebook intrusion is associated with depression (Blachnio, Przepiórka, & Pantic, 2015). One cross-sectional study found that having a depressive character was associated with Facebook addiction among Taiwanese university students (Hong, Huang, Lin, & Chiu, 2014), while another found that severe depression was positively associated with Facebook addiction among Turkish university students (Koc & Gulyagci, 2013). Based on these findings, it was expected that greater levels of social media intrusion will be associated with higher levels of depressive symptoms in the present study.

Studies also are beginning to examine the relationship between Facebook addiction and both anxiety and stress. One cross-sectional study found that anxiety was associated with Facebook addiction among Turkish college students (Koc & Gulyagci, 2013). Elphinston and Noller (2011) found that jealous cognitions and hypervigilant surveillance behaviours mediated the association between Facebook intrusion and relationship dissatisfaction. Finally, 15.5% of college students reported that using Facebook sometimes caused them to feel stressed, with female students significantly more likely to endorse this sentiment (Thompson & Loughheed, 2012). Based on this prior research, it was expected that social media intrusion will be positively associated with anxiety and stress in the present study.

Social media and religiosity/spirituality

The relationship between religiosity and social media is also a topic that needs to be explored, as the millennial generation is identifying as less religious, while use of social networking sites continues to increase (Foley, 2015). Previous research has found that those who read the Bible more frequently are less likely to use social networking sites (Miller, Munday, & Hill, 2013). Furthermore, highly religious individuals are less likely to be members of social networking sites, and visit such sites less frequently (Smith & Snell, 2009). Although the specific mechanisms are unclear, the scant research conducted thus far suggests that use of social media and religious commitment may be antithetical, in the sense that those who heavily utilise social networking sites may be less involved with religion/spirituality. The present study is somewhat exploratory in nature and will

determine if religious commitment and spiritual well-being mediate the association between social media intrusion and psychological adjustment.

Religiosity/spirituality and mental health

Religiosity in the present study is measured by the self-perceived quality of the participants' spiritual lives, as well as the degree to which they are committed to their religion. Koenig and Larson (2001) discovered that religious involvement holds both positive and negative associations with mental health. McCullough and Larson (1999), in a review of the literature on religion and depression, found an association between specific dimensions of religiosity, including high levels of organizational religious involvement and intrinsic religious motivation, and reduced risk for depressive symptoms and depressive disorders.

Krumrei, Pirutinsky, and Rosmarin (2013) found that, for Jewish participants, a distrust in God and negative religious coping strategies were significantly associated with higher levels of depressive symptoms. Also, intrinsic religiosity was found to be a statistically significant moderator in regard to depressive symptoms for Jewish individuals who utilised positive religious coping, suggesting that, for Jewish participants who fell into the trust of God and positive religious coping categories, only those high on intrinsic religiosity showed significantly fewer depressive symptoms. In a separate study, it was found that religious beliefs and practices were associated with lower levels of depression for Orthodox Jews, but not for non-Orthodox Jews (Rosmarin, Pirutinsky, Pargament, & Krumrei, 2009). Furthermore, it was found that there was a significant positive correlation between religious commitment and satisfaction with life for self-reported Mormon participants, and scrupulosity, defined as obsessive fears associated with engaging in sinful activities and punishment from God (Abramowitz, Huppert, Cohen, Tolin, & Cahill, 2002), mediated the association between maladaptive perfectionism and depression, anxiety, and satisfaction with life (Allen & Wang, 2014). Abdel-Khalek (2012) discovered that for Muslim Kuwaitis, high levels of religiosity were significantly associated with subjective well-being across all age groups. For Japanese monks, training in the art of mindfulness-based stress reduction (MBSR), an offshoot of traditional Buddhist Zen meditation, overall health-related quality of life (HRQOL) was higher with longer training in this particular type of meditation (Shaku, Tsutsumi, Goto, & Arnoult, 2014).

We can conclude from this body of research that religious beliefs and practices that are firmly proselytised into an individual are strongly related to lower rates of depression and higher quality of life for these individuals. It was expected in the present study that those who are more spiritually content and more committed to their religion will experience lower levels of depression, anxiety, and stress.

The objectives of the present study were twofold: (1) to determine if social media intrusion is associated with psychological adjustment indices; and (2) to determine if religious commitment and spiritual well-being mediate the association between social media intrusion and psychological adjustment indices. The main question addressed in this study was: Has immersion in social networking use supplanted strong religious commitment and spiritual contentment, leading to poor psychological adjustment?

It was expected that: (1) social media intrusion would be associated with higher levels of stress, anxiety, and depression; and (2) social media intrusion would be associated with

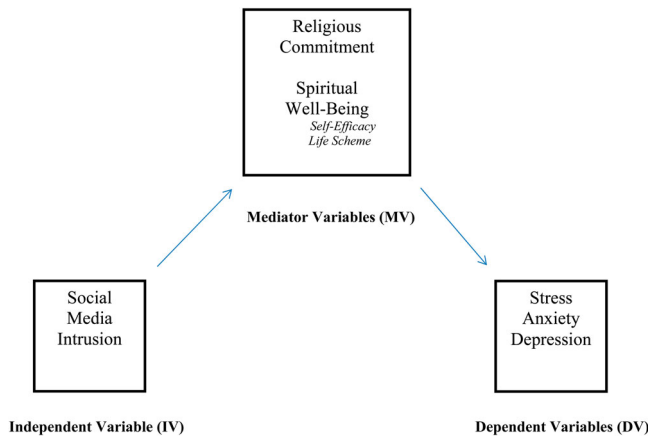


Figure 1. Mediation model.

lower levels of religious commitment and spiritual well-being, which would, in turn, be associated with higher levels of stress, anxiety, and depression (see Figure 1 for mediation model).

Methods

Participants

The participants were comprised of 209 undergraduate students (26.8% male; 72.7% female) at a midsize southeastern university, with a mean age of 20.23, $SD = 3.63$. The racial breakdown of the sample was as follows: 46.4% White, 42.6% Black, 5.3% Asian, .5% American Indian/Alaskan Native, .5% Native Hawaiian/Pacific Islander, and 4.3% biracial, with .5% not reporting race. The class-ranking breakdown was as follows: 57.9% freshmen, 23% sophomores, 11.5% juniors, 2.9% seniors, and 4.8% not reporting class. Most of the participants were single, with this demographic comprising 92.3% of the sample, while 5.7% of the sample was married, .5% of the sample divorced, and .5% of the sample was separated from their partner, with 1% not reporting relationship status.

Annual family income broke down as follows: 18.7% making \$20,000 or less, 23.9% making between \$20,001 and \$40,000, 17.2% making between \$40,001 and \$60,000, 12.4% making between \$60,001 and \$80,000, 9.6% making between \$80,001 and \$100,000, and 8.6% making above \$100,000, while 9.6% did not report annual family income. Religious affiliation was dispersed as follows: 4.3% Catholic, .5% Protestant (did not specify Protestant denomination), 41.6% Baptist, 10% Methodist, 1.9% Episcopal, 11% Other Christian, .5% Jewish, 2.4% Buddhist, 1% Muslim, .5% Mormon, 4.8% Atheist/Agnostic, 1% other faith tradition, 17.7% nondenominational, and 2.9% unspecified.

Procedure

Approval from the Institutional Review Board (IRB) was attained prior to data collection. Participants were brought into the psychology lab and given a set of five questionnaires to answer. Each participant was briefed on the nature of the questionnaires and was told

that their participation was entirely voluntary and therefore they could withdraw from the study at any time. Participants were also granted one research credit for their undergraduate Introduction to Psychology course.

Measures

Religious Commitment Inventory-10 (Worthington et al., 2003)

This questionnaire was used to assess the degree to which a participant is religious. *Ex: I spend time trying to grow in understanding of my faith.* This measure is a 10-item format on a 5-point Likert Scale (e.g., Not at all = 1 to Totally = 5). The scale consists of two subscales measuring interpersonal and intrapersonal religious commitment. The overall scale has a reliability of .93 (Worthington et al., 2003). Because the two subscales tend to be highly correlated with each other, Worthington et al. (2003) do not recommend using the subscales in either research or clinical work. Hence, only the whole scale scores were used in analyses.

Spirituality Index of Well-Being (Daaleman & Frey, 2004)

This scale measures perception of spiritual quality of life, with spirituality defined as a sense of meaning or purpose from a transcendent source. This scale is a 12-item format using a 5-point Likert Scale for assessment (e.g., 1 = Strongly Agree to 5 = Strongly Disagree). The scale is divided into two subscales: the Self-Efficacy Subscale ("I don't know how to begin to solve my problems") and the Life Scheme Subscale ("I have a lack of purpose in my life"). This scale has a total reliability of .91, with a reliability of .86 for the Self-Efficacy Subscale, and .89 for the life scheme subscale (Daaleman & Frey, 2004).

Facebook Intrusion Questionnaire (Elphinston & Noller, 2011)

This is an 8-item scale used to measure how much Facebook interferes with participants' daily lives ("I often think about Facebook when I am not using them"). These items are scored on a seven-point Likert Scale (e.g., 1 = Strongly Disagree to 7 = Strongly Agree). This questionnaire has a reliability of .85 (Table 1) (Elphinston & Noller, 2011). Directions for this questionnaire instructed participants to consider other forms of social media in addition to Facebook (e.g., Twitter).

Depression Anxiety Stress Scales-21 (Lovibond & Lovibond, 1995)

This is a 21-item self-report questionnaire that was used to assess levels of depression, anxiety, and stress. It is a short-form version of the full-length 42-item DASS Scale. These items are scored on a 4-point Likert Scale (0 = Did not apply to me at all to 3 = Applied to me very much, or most of the time). The reliabilities of the subscales for the DASS short form are as follows: Depression: .88, Anxiety: .82, Stress: .90 (Henry & Crawford, 2005). Please refer to Table 1 for summary of descriptive statistics for the present study.

Participant Demographic Questionnaire

This questionnaire assessed the participants' age, race, sex, marital status, annual family income, religious affiliation, and academic class.

Table 1. Descriptive statistics for social media intrusion, religiosity, and psychological outcome variables.

Variable	<i>M</i> (range)	<i>SD</i>	Cronbach's alpha
Social media intrusion	29.13 (8–53)	10.75	.85
Religious commitment	30.31 (10–50)	10.71	.94
Spiritual well-being	48.06 (12–60)	9.63	.92
<i>Self-Efficacy</i>	23.90 (6–30)	4.65	.86
<i>Life Scheme</i>	24.16 (6–30)	5.81	.89
Depression	3.65 (0–17)	3.48	.83
Anxiety	4.82 (0–20)	3.76	.73
Stress	6.93 (0–17)	3.87	.76

Results

Preliminary analyses

Bivariate correlational analyses were performed to analyse first-order associations among social media intrusion, spiritual well-being, depression, anxiety, and stress. All correlations presented in Table 2 represent Pearson coefficients.

As evident in Table 2, social media intrusion was significantly positively associated with depression, anxiety, and stress. Social media intrusion was significantly negatively associated with spiritual well-being, as well as with the Self-Efficacy Subscale of spiritual well-being, but not with the life scheme subscale of spiritual well-being. Social media intrusion also was not significantly associated with religious commitment. Finally, spiritual well-being and both the self-efficacy and life scheme dimensions were significantly negatively associated with depression, anxiety, and stress.

Associations among demographic variables and the three dependent variables – depression, anxiety, and stress – were examined using bivariate correlational analyses. Demographic variables with more than one category were converted into dichotomous variables prior to analysis. Marital status was recoded into not married (“0”)/married (“1”); race was recoded into white (“0”)/non-white (“1”); and religious affiliation was recoded into Christian (“0”)/non-Christian (“1”). Family income was not recoded into a dichotomous variable, since higher categorical values indicate higher income brackets (0 = \$20,000/year through 5 = >\$100,000). Academic class also was not recoded into a dichotomous variable (0 = freshman; 1 = sophomore; 2 = junior; 3 = senior). All demographic variables significantly associated with a dependent or mediator variable (MV) were controlled for in regression analyses.

Table 2. Correlations among social media intrusion, religiosity/spirituality, and psychological outcomes variables.

	1	2	3	4	5	6	7	8
1. Social media intrusion	–	–.06	–.20**	–.29**	–.11	.18*	.21**	.30**
2. Religious commitment	–	–	.16*	.07	.22**	–.10	–.06	–.01
3. Spiritual well-being	–	–	–	.90**	.94**	–.60**	–.46**	–.38**
4. Self-efficacy	–	–	–	–	.69**	–.56**	–.51**	–.44**
5. Life scheme	–	–	–	–	–	–.54**	–.36**	–.28**
6. Depression	–	–	–	–	–	–	.61**	.60**
7. Anxiety	–	–	–	–	–	–	–	.66**
8. Stress	–	–	–	–	–	–	–	–

* $p < .05$.

** $p < .01$.

Mediation analyses

Baron and Kenny (1986) proposed four requirements that must be met in order to infer mediation: (1) the independent variable (IV) is significantly associated with the mediator; (2) the IV is significantly associated with the dependent variable (DV) in the absence of the mediator in the model; (3) the mediator is significantly associated with the DV; and (4) the association between the IV and the DV is attenuated when the mediator is added to the model. These requirements were tested for each of the three dependent variables (stress, anxiety, depression). These requirements were met for the following variables: Social media intrusion (IV) – spiritual well-being, and the Self-Efficacy Subscale (mediator) – and stress (DV). (Note: For mediation analyses for each DV, if a covariate was included in analyses for one of the above steps, it also was included in analyses for all other steps.)

Stress

After controlling for age and sex, social media intrusion was significantly associated with spiritual well-being ($\beta = -.15, p = .05$). As indicated in Table 3, social media intrusion was significantly associated with stress ($\beta = .23, p < .01$). With spiritual well-being added to the model, the association between social media intrusion and stress was attenuated ($\beta = .18, p < .01$), with spiritual well-being significantly inversely associated with stress ($\beta = -.33, p = .000$). These results indicate that spiritual well-being partially mediates the relationship between social media intrusion and stress. Further analysis using the Sobel test, a conservative procedure for testing mediation effects (Sobel, 1982) revealed that this mediation effect is only marginally significant ($z = 1.88, p = .06$).

After controlling for age and sex, social media intrusion was significantly associated with self-efficacy ($\beta = -.21, p < .01$). As indicated in Table 4, social media intrusion was significantly associated with stress ($\beta = .23, p < .01$). With self-efficacy added to the model, the association between social media intrusion and stress was attenuated ($\beta = .15, p = .03$), with self-efficacy significantly inversely associated with stress ($\beta = -.36, p = .000$). These results indicate that self-efficacy partially mediates the relationship between social media intrusion and stress. Further analysis using the Sobel test revealed that this mediation effect is significant ($z = 2.61, p < .01$).

After controlling for age, sex, and religious affiliation, social media intrusion was not significantly associated with religious commitment ($\beta = -.05, p = .53$). Furthermore, after controlling for age, social media intrusion was not associated with the life scheme subscale of

Table 3. Spiritual well-being as a mediator in the association between social media intrusion and stress.

Outcome variable: stress	β	t	R^2	ΔR^2
<i>Block 1</i>				
Age	-.17	2.62 [†]	.112	
Sex (0 = male; 1 = female)	.28	4.27**		
<i>Block 2</i>				
Social media intrusion	.23	3.30**	.158	.046
<i>Block 3</i>				
Spiritual well-being	-.33	-5.24**	.260	.102

Note: $N = 204$.

** $p < .01$ ([†] $p = .01$).

* $p < .05$.

Table 4. Self-efficacy as a mediator in the association between social media intrusion and stress.

Outcome variable: stress	<i>B</i>	<i>t</i>	<i>R</i> ²	ΔR^2
<i>Block 1</i>				
Age	−.17	2.62 [†]	.112	
Sex (0 = male; 1 = female)	.28	4.27**		
<i>Block 2</i>				
Social media intrusion	.23	3.30**	.158	.046
<i>Block 3</i>				
Self-efficacy	−.36	−5.70**	.276	.118

Note: *N* = 204.
 ***p* < .01 ([†]*p* = .01).
 **p* < .05.

spiritual well-being ($\beta = -.06, p = .39$). Because the statistical arm of Baron and Kenney’s model (1986) requiring a significant association between the IV and the MV was not met, further mediation analyses were not conducted with the religious commitment and life scheme variables.

Finally, after controlling for appropriate covariates, social media intrusion was not significantly associated with either depression ($\beta = .13, p = .08$) or anxiety ($\beta = .11, p = .12$). Hence, mediation analyses were not performed with these outcome variables.

Discussion

The main objectives of this study were to determine whether social media intrusion was significantly associated with psychological adjustment, and whether spiritual well-being and religious commitment mediated this association. It was found that social media intrusion was significantly positively associated with depression, anxiety, and stress, and the self-efficacy component of spiritual well-being mediated the association between social media intrusion and stress. One explanation for why the self-efficacy component mediates this relationship may be that individuals who use social media more and allow it to colour the way they view themselves and others may then experience a diluted sense of self-efficacy or ability, which in turn may lead to increased stress. Bandura defined self-efficacy as confidence in one’s ability to execute behaviours and complete tasks (1977). One reason why social media intrusion may decrease individuals’ sense of self-efficacy, particularly to improve their lives and find solutions to problems, as self-efficacy was measured in our study, is that the more they view the public profiles of peers, the less confident they feel in their ability to improve and/or advance in their lives. Seeing similar people achieve different goals such as marriage, careers, or children, and having this social metric to which to compare themselves and their own successes, may lead them to believe they do not measure up, and they believe they are incapable of being self-sufficient and successful, which leads to feeling stressed. However, because correlation does not automatically imply causality, more research is needed to clarify this specific relationship.

It is important to note that the self-efficacy dimension of spiritual well-being, but not the life scheme dimension or spiritual well-being as a global indice, mediated the association between social media use and psychological stress. These incongruent findings suggest that, while immersion in social media may dwarf one’s confidence in improving

his/her life, it appears to have a benign effect on one's sense of meaning or purpose in life. Furthermore, while social media intrusion was significantly inversely associated with spiritual well-being, only the self-efficacy dimension of this construct significantly mediated the association between social media intrusion and stress. How to define spiritual well-being has been a vexing challenge in the religiosity/spirituality literature (Hill & Pargament, 2003; Hill et al., 2000; Zinnbauer et al., 1997; Zinnbauer, Pargament, & Scott, 1999); the measure used in the present study delineated two dimensions of spiritual well-being: self-efficacy to solve one's problems, and a sense of life purpose and meaning. It appears that self-efficacy is the salient dimension of spiritual well-being that is associated with high levels of stress for those enmeshed in social media.

Moreover, religious commitment was not inversely associated with social media intrusion, and did not mediate the association between social media intrusion and adjustment. Previous research has found that those who read the Bible more frequently are less likely to use SNSs (Miller et al., 2013). The Religious Commitment Inventory-10 (Worthington et al., 2003) encompasses both overt religious behaviours, such as making financial contributions to a religious organisation, and private and internal religious actions, such as spending time in religious thought and reflection. As Miller and colleagues opine, it may be that Bible reading reflects a solitary orientation antithetical to socialising on social media sites. Specific indices of religious commitment may be differentially associated with social media use, depending on the nature of the religious activity.

Limitations

This study, while having a fairly large sample size and low attrition, does have some limitations. The first and foremost limitation is that, because this study was conducted at a university in the southeastern region of the United States, it provided a very limited snapshot of religions. The majority of the participants identified as Baptist, and there were very few participants who identified as either nonreligious or of a non-Christian religion, which limits the sample range. Also, because the majority of participants identified as either white or black, there was a limited range of racial diversity. Lastly, the correlational design of the present study is a limitation in that we are unable to determine a causal relationship among social media intrusion, religiosity/spirituality, and psychological adjustment.

Despite such limitations, the present study contributes to the scant literature on religiosity and social media use. Disentangling religiosity and spirituality has been a thorny issue within the literature (Hill & Pargament, 2003; Hill et al., 2000; Zinnbauer et al., 1997; Zinnbauer, Pargament, & Scott, 1999); our study examined religious commitment and spiritual well-being as separate constructs in an effort to identify specific religious and spiritual elements that are associated with social media use.

Future research

For future studies, it is recommended that a sample be taken from a different region of the US or even from a different nation. Because social media networks are widespread, it would be interesting to see the relationship between these variables on an international scale and with varying ethnicities and cultures. Similarly, other regions of the US apart from the South would have a very different makeup of cultures and religious attitudes. Since

this study was conducted in the Bible Belt, it is very unlikely a sample could be obtained from this region that is not primarily Protestant.

Furthermore, the relationship between social media intrusion and spirituality that has been established through the findings in the present study is only correlational and needs to be researched further in an effort to establish causality. One way of doing this may be through an experimental study, which has the ability to manipulate these variables to determine whether an increase in social media intrusion leads to a decrease in self-efficacy and negative psychological effects.

Also, a longitudinal study examining the effects of social media intrusion on psychological adjustment would be unprecedented and potentially significant. Because the millennial generation is the first generation to grow up with social media and heavy use of the internet, there are virtually no data on how these rapid changes in communication are affecting society for the long term. A study spanning 10 or 20 years examining how technology and social media changes the way these born-and-raised users interact as a society could be a vast source of information that could benefit a great number of interested parties, such as psychologists, scientists, technology companies, teachers, and even parents. For better or worse, the internet, at large, and social media specifically, are now entities that psychologists need to be researching for the sake of both clients and society.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- Abdel-Khalek, A. (2012). Subjective well-being and religiosity: A cross-sectional study with adolescents, young and middle-age adults. *Mental Health, Religion & Culture*, 15, 39–52. doi:10.1080/13674676.2010.551324
- Abramowitz, J., Huppert, J., Cohen, A., Tolin, D., & Cahill, S. (2002). Religious obsessions and compulsions in a non-clinical sample: The Penn Inventory of Scrupulosity (PIOS). *Behaviour Research and Therapy*, 40, 825–838. doi:10.1016/S0005-7967(01)00070-5
- Allen, G. E., & Wang, K. T. (2014). Examining religious commitment, perfectionism, scrupulosity, and well-being among LDS individuals. *Psychology and Religion and Spirituality*, 6, 257–264. doi:10.1037/a0035197
- Arrington, M. (2005). 85% of college students use Facebook. Retrieved from <http://www.techcrunch.com/2005/09/07/85-of-college-students-use-facebook>.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215. doi:10.1037/0033-295X.84.2.191
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182. doi:10.1037/0022-3514.51.6.1173
- Blachnio, A., Przepiórka, A., & Pantic, I. (2015). Internet use, Facebook intrusion, and depression: Results of a cross-sectional study. *European Psychiatry*, 30, 681–684. doi:10.1016/j.eurpsy.2015.04.002
- Blease, C. R. (2015). Too many 'friends,' too few 'likes'? Evolutionary psychology and 'Facebook depression'. *Review of General Psychology*, 19, 1–13. doi:10.1037/gpr0000030
- Brown, R. I. F. (1997). A theoretical model of the behavioural addictions- applied to offending. In J. E. Hodge, M. McMullan, & C. R. Hollin (Eds.), *Addicted to crime* (pp. 13–65). Chichester, United Kingdom: John Wiley.

- Daaleman, T., & Frey, B. (2004). The spirituality index of well-being: A new instrument for health-related quality-of-life research. *Annals of Family Medicine*, 2, 499–503. doi:10.1370/afm.89
- Elphinston, R., & Noller, P. (2011). Time to face it! Facebook intrusion and the implications for romantic jealousy and relationship satisfaction. *Cyberpsychology, Behavior, and Social Networking*, 14, 631–635. doi:10.1089/cyber.2010.0318
- Foley, K. (2015). Millennials are losing their religion- and social media might explain why. *MSN News*. Retrieved from <http://www.msn.com/en-us/news/us/millennials-are-losing-their-religion%E2%80%9494and-social-media-might-explain-why/ar-BBkyswx>
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44, 227–239. doi:10.1348/014466505X29657
- Hill, P., & Pargament, K. (2003). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *American Psychologist*, 58, 64–74. doi:10.1037/0003-066X.58.1.64
- Hill, P., Pargament, K., Hood, R., McCullough, M., Swyers, J., Larson, D., & Zinnbauer, Z. (2000). Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behaviour*, 30, 51–77. doi:10.1111/1468-5914.00119
- Hong, F., Huang, D., Lin, H., & Chiu, S. (2014). Analysis of the psychological traits, Facebook usage, and Facebook addiction model of Taiwanese university students. *Telematics and Informatics*, 31, 597–606. doi:10.1016/j.tele.2014.01.001
- Koc, M., & Gulyagci, S. (2013). Facebook addiction among Turkish college students: The role of psychological health, demographic, and usage characteristics. *Cyberpsychology, Behavior, and Social Networking*, 16, 279–284. doi:10.1089/cyber.2012.0249
- Koenig, H. G., & Larson, D. B. (2001). Religion and mental health: Evidence for an association. *International Review of Psychiatry*, 13, 67–78. doi:10.1080/09540260124661
- Krumrei, E., Pirutinsky, S., & Rosmarin, D. (2013). Jewish spirituality, depression, and health: An empirical test of a conceptual framework. *International Journal of Behavioral Medicine*, 20, 327–336. doi:10.1007/s12529-012-9248-z
- Labrague, L. (2014). Facebook use and adolescents' emotional states of depression, anxiety, and stress. *Health Science Journal*, 8, 80–89. Retrieved from <http://hdl.handle.net/11400/1481>
- Lovibond, P., & Lovibond, S. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck depression and anxiety inventories. *Behaviour Research and Therapy*, 33, 335–343. doi:10.1016/0005-7967(94)00075-U
- McCullough, M. E., & Larson, D. B. (1999). Religion and depression: A review of the literature. *Twin Research and Genetics*, 2, 126–136. doi:10.1375/twin.2.2.126
- Miller, B., Munday, P., & Hill, J. (2013). Faith in the age of Facebook: Exploring the links between religion and social network site membership and use. *Sociology of Religion*, 74, 227–253. doi:10.1093/socrel/srs073
- Pew Research Center. (2015, May 12). *America's changing political landscape*. Washington, DC: Author. Retrieved from <http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/>
- Rosmarin, D., Pirutinsky, S., Pargament, K., & Krumrei, E. (2009). Are religious beliefs relevant to mental health among Jews? *Psychology of Religion and Spirituality*, 1, 180–190. doi:10.1037/a0016728
- Shaku, F., Tsutsumi, M., Goto, H., & Arnoult, D. S. (2014). Measuring the effects of Zen training on quality of life and mental health among Japanese monk trainees: A cross-sectional study. *The Journal of Alternative and Complementary Medicine*, 20, 406–410. doi:10.1089/acm.2013.0209
- Smith, C., & Snell, P. (2009). *Souls in transition: The religious and spiritual lives of emerging adults*. New York, NY: Oxford University Press.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology*, 13, 290–312. doi:10.2307/270723
- Thompson, S. H., & Loughheed, E. (2012). Frazzled by Facebook? An exploratory study of gender differences in social network communication among undergraduate men and women. *College Student Journal*, 46, 88–99. Retrieved from <https://eric.ed.gov/?id=EJ991172>

- Verduyn, P., Lee, D. S., Park, J., Shaback, H., Orvell, A., Bayer, J., ... Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General*, 144, 480–488. doi:10.1037/xge0000057
- Worthington, E. L., Wade, N. G., Hight, T. L., Ripley, J. S., McCullough, M. E., Berry, J. W., ... O'Connor, L. (2003). The Religious Commitment Inventory-10: Development, refinement, and validation of a brief scale for research and counseling. *Journal of Counseling Psychology*, 50, 84–96. doi:10.1037/0022-0167.50.1.84
- Zinnbauer, B. J., Pargament, K. I., Cole, B., Rye, M. S., Butter, E. M., Belavich, T. G., Hipp, K. M., Scott, A. B., & Kadar, J. L. (1997). Religion and spirituality: Unfuzzifying the fuzzy. *Journal for the Scientific Study of Religion*, 36, 549–564. doi:10.2307/1387689
- Zinnbauer, B. J., Pargament, K. I., & Scott, A. B. (1999). The emerging meanings of religiousness and spirituality: Problems and prospects. *Journal of Personality*, 67, 889–919. doi:10.1111/1467-6494.00077

Copyright of Mental Health, Religion & Culture is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.