Facebook and Social Contagion of Mental Health Disorders Among College Students

Sharon J. Davis
Arkansas State University, United States

Asher M. Pimpleton-Gray
Arkansas State University, United States

Abstract

Non-suicidal self-injury is growing in popularity among young people. Studies suggest that the phenomenon of social contagion may be to blame. This study explored the influence of the popular social media site, Facebook, on mental health, non-suicidal self-injury, and suicidal behavior in college students. A total of 244 undergraduate students participated in this study. Results found that Facebook can increase personal anxiety and depression, but it is more likely to increase happiness and good mood. However, for some individuals Facebook can lead to more self-injurious behavior, such as cutting.

Keywords: social media, Facebook, mental health, non-suicidal self-injury, suicidal behavior

Introduction

In recent years, there has been a dramatic increase in non-suicidal self-injury among young people. Non-suicidal self-injury (NSSI) is defined as the deliberate harming of one's body without suicidal intent, and for purposes not socially sanctioned, such as tattooing, piercing, and (International Society for the Study of Self-Injury, 2007). NSSI has become a well-known behavior among teens and young adults and research shows that between 17–40 percent of adolescents have indulged in it (Lloyd-Richardson, Dierker, & Kelley, 2007) and at least half of young people know someone who self-injures (Purington & Whitlock, 2010). Several studies have examined possible reasons for the rise in NSSI and many have noted a "social contagion" phenomenon associated with the behavior (Brown, Fischer, Goldwich, Keller, Young, & Plener, 2017; Jarvi, Jackson, Swenson, & Crawford, 2013; Purlington & Whitlock, 2010). Social contagion theory suggests that behaviors and attitudes can pass from person to person similar to how viruses and bacteria spread symptoms through a crowd. Further, it seems that young people are particularly susceptible to social contagion as noted in the spread of fashion trends (Gladwell, 2000), drug use (Ali, Amialchuk, & Dwyer (2011), disordered eating (Rosenburg & Kosslyn, 2011), and smoking cessation (Christakis & Fowler, 2008). Social contagion of NSSI is defined as "the presence of NSSI in at least two people in the same group in a 24-hour time period" (Rosen & Walsh, 1989). Studies show that teens and young adults with mental health disorders such as depression, anxiety, eating disorders, disruptive mood disorders, and substance use are at higher risk of NSSI (Jacobson, Meuhlenkamp, Miller et al., 2008).

Results of the 2014 National Survey on Drug Use and Health (NSDUH) show that over 46 million (18.1 percent) adults age 18 or above have mental health disorders, including serious mental illness (SMI) in the U.S. And rates for adolescents and young adults are even higher at 46.3 percent and 20.1 percent respectively. Prevalence of past year SMI among college-age adults (18–25) was higher in 2014 than in 2008–2013 (NSDUH, 2014). Serious mental illnesses, as defined by NSDUH (2014), include:

1) "A mental, behavioral, or emotional disorder (excluding developmental and substance use disorders);
2) Diagnosable currently or within the past year;
3) Of sufficient duration to meet diagnostic criteria specified within the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV); and,
4) Resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities."

Reports of major depressive episodes have also seen a recent rise among 18–25 year olds from 8.7 percent in 2013 to 9.3 percent in 2014. A major depressive episode may include feelings of intense sadness, hopelessness, fatigue, loss of interest or pleasure, and suicidal thoughts or gestures (American Psychiatric Association, 2013). Although rates of mental health disorders are increasing, only 33.6 percent of young adults with any mental illness (AMI) received some form of mental health treatment, including inpatient, outpatient, or medication in the past year (NSDUH, 2014).

The release of the Diagnostic and Statistical Manual (5^{th} ed) or the DSM-5 in 2013 brought new and important attention to non-suicidal self-injury (NSSI) as a disorder. Leading up to its release, many experts proposed that NSSI should be a separate syndrome rather than a symptom in this newest version of the DSM (Muehlenkamp, 2005; Shaffer & Jacobson, 2009). Ultimately, however, due to a need for more research, it was not identified as a separate

condition, but was included as a *condition for further study* (American Psychiatric Association, 2013).

According to the DSM-5, the most vital feature of NSSI is repeatedly inflicting of shallow, yet painful injuries to the surface of one's body (American Psychiatric Association, 2013). Most commonly, the individual uses a sharp instrument, such as a razor, to inflict superficial cuts typically on the arms, upper legs, or abdomen. Other common methods of self-injury include burning, scratching, puncturing with a needle, or punching oneself. The purpose is described as a source of relief from emotional distress or sometimes as a form of self-punishment (American Psychiatric Association, 2013). As well, studies have found sexual abuse, loss of a parent, negative social interactions, and being around others who self-injure as "triggers" for the behavior (Laye-Gindhu & Schoner-Reichl, 2005; Akuyz., G., Sar, Kugu, & Dogan, 2005).

Recent research suggests that 17–18 percent of adolescents in the general population have engaged in NSSI (International Society for the Study of Self-Injury, 2007; Muehlenkamp, Claes, Havertape, & Plener, 2012). Among adolescents with mental health disorders, rates of NSSI average 40 percent (Jacobson et al., 2008; Kerr, Muehlenkamp, & Turner, 2010). Furthermore, Whitlock et al, 2011, referred to NSSI as also common in college populations and studies show as many as 13.4 percent of college age young adults have at some time participated in the behavior (Swannell et al., 2014). Most alarmingly, individuals who engage in NSSI are seven times more likely to make a later attempt at suicide (Guan, Fox, & Prinstein., 2012).

Self-injury seems to be more common among females, accounting for 64-77 percent (Laye-Gindhu & Schoner-Reichl, 2005; Nixon et al, 2008). However, some studies suggest males may be under identified because they are less likely to engage in commonly identified forms of NSSI, like cutting or burning, and are more likely to engage in skin picking, biting, or street fighting (Laye-Gindhu & Schoner-Reichl, 2005).

Pop-culture and social media has also helped bring attention to the prevalence of NSSI, but they may also play an important role in the social contagiousness of the behavior. An article by Purington and Whitlock (2010) pointed to a dramatic increase in media portrayals of NSSI since the 1980s. According to the authors, a Google search of "self-injury" yields over 15 million results and YouTube has over 2,000 self-injury videos (2010). Social media sites such as Facebook, Instagram and Twitter provide a forum for self-injury awareness and support, but may also serve as a place for young people to get ideas for how to engage in the behavior. Instagram, a popular social media site among young people, was the focus of a recent study by Brown, Fischer, Goldwich, Keller, Young, and Plener (2017). They found that people who self-injure often post pictures of their injuries on Instagram. Moreover, they found that images of deeper wounds illicit more empathic comments from others thus socially reinforcing the behavior. A study by Murray and Fox (2006) found that many participants in NSSI groups on Facebook find the groups to be beneficial and 73 percent said these groups led to a decrease in their NSSI. However, this same study found that 11 percent of respondents attributed these groups with an increase in their self-injurious behavior (Murray & Fox, 2006).

According to a large literature review by Jarvi, Jackson, Swenson, and Crawford (2013), studies consistently indicate that NSSI may carry this phenomenon of social contagion. Especially for young adults and teens who are around peers who self-injure. This phenomenon has been observed in clinical settings (Nock & Prinstein, 2005) and in community settings (Nock, Prinstein, & Sterba, 2009). Swannell et al. (2010) examined self-injury sites on the

internet. Specifically, they reviewed websites dedicated to self-injury and found most sites had information intended to benefit individuals who self-injure and their families. Their search did not find any sites which overtly encouraged NSSI in its readers. However a study by Murray and Fox (2006) found that *any* content related to NSSI can lead to an increase in behavior among those who self-injure.

The purpose of this study was to examine the effects of social media on mental health and self-injury in college students. The *Self-injury and Social Media Survey* was given to a sample of undergraduate college students in order to answer the following questions:

RQ1. Is there a relationship between mental health and Facebook?
RQ 2. How does Facebook affect self-injury?
RQ 3. How does Facebook affect suicidal thoughts and gestures?

Method

The *Self-injury and Social Media Survey* is a 35-item survey designed to measure the relationship between a person's mental health and Facebook experiences. This survey was developed by Davis and Pimpleton-Gray (2017). A test for internal consistency yielded an alpha = .85. The survey consists of 25 likert-type items and a set of demographic items, including gender, race/ethnicity, and year in school plus five questions related to mental health diagnosis and suicidal behavior.

Sample

The survey was presented online to over 400 students enrolled in an Introduction to Psychology course at a medium-sized university in Arkansas. A total of 244 undergraduate students chose to participate in this study. Of those, 4.5 percent identified as Asian/Pacific Islander, 16.4 percent as Black/African American, 3.7 percent as Hispanic/Latino, 73.4 percent as White/Caucasian, and 2 percent as Other. The age range of the students was 18–40 with a mean age of 19.6; 172 were female and 72 male.

Each participant was asked to describe the mental health of their Facebook friends using a Likert-type scale, for example, they were asked to respond to "I have Facebook friends who think about suicide". They were to rate this item on a 5-point scale ranging from strongly disagree to strongly agree. A scale was used rather than a simple "yes" or "no" response so participants could have more variance in their rating. Approximately 30 percent agreed or strongly agreed they have Facebook friends with depression and 33 percent said agreed or strongly agreed to having Facebook friends with anxiety. Nearly a quarter of respondents (24.3 percent) stated they had Facebook friends who think about suicide.

Results

Research Question 1

All data were entered into the IBM statistical package, SPSS, for analysis and both descriptive statistics and t-test analyses was used to answer the research questions. The first research question which was measured was *Is there a relationship between mental health and Facebook?* Specifically, what was the effect of using Facebook on a person's mental health? Examples of these items included: "I feel less depressed when I interact with a Facebook friend who has depression"; "I feel more anxious or stressed when I interact with an anxious friend on Facebook"; "I feel comforted knowing I have Facebook friends with similar problems to

mine." These questions primarily asked participants to rate how Facebook friends' moods and/or mental health disorders affect their own and also whether or not they get help or support from Facebook friends when it comes to mental health. Results showed that Facebook has some effect on anxiety and depression, but it has a greater effect on happiness. Specifically, 20.6 percent of the participants said they felt more anxious because of friends' anxious or stressful comments, and 21.7 percent felt more depressed when their friends on Facebook were depressed. On the other hand, 57.4 percent stated they feel happy when friends post happy or uplifting comments. Although the participants did agree that happy comments from friends made them feel happy too, there was little agreement with the idea that Facebook can be good for peer support. In fact, in response to the item "I feel Facebook is a good place to get peer support for my problems", 18.1 percent disagreed and 49.1 percent strongly disagreed. Furthermore, 15.7 percent disagreed and 56 percent strongly disagreed that they get ideas for stress management from Facebook. As well, 18.3 percent disagreed and 42.8 percent strongly disagreed that their Facebook friends have helped when they feel depressed.

Help when Depressed		**Stress Management**		**Overall Peer Support**	
Strongly Disagree	42.8%	Strongly Disagree	56.0%	Strongly Disagree	49.1%
Disagree	18.3%	Disagree	15.7%	Disagree	18.1%
Neutral	18.8%	Neutral	17.1%	Neutral	12.5%
Agree	9.1%	Agree	4.2%	Agree	10.2%
Strongly Agree	11.1%	Strongly Agree	6.9%	Strongly Agree	10.2%

Table 1: *Peer support from Facebook*

Research Question 2

The second research question was *How does Facebook affect self-injury?* Survey items used to measure this question included: "I cut myself more often when Facebook friends post about cutting"; "When a Facebook friend posts about self-injury, it makes me want to injure myself"; "I have gotten ideas for how to hurt myself from Facebook." Results showed a small percentage of participants get ideas or are influenced by Facebook friends who post about self-injury. Just 6.5 percent either agreed or strongly agreed to cutting themselves more when friends post about cutting and 6.1 percent agreed or strongly agreed that when a Facebook friend posts about self-injury, it makes them want to injure themselves. Last, 6 percent stated they got ideas about how to hurt themselves from Facebook. However, a significant relationship did exist between getting ideas for self-injury from Facebook and cutting more when Facebook friends post about cutting ($r=.71$).

Research Question 3

Finally, the last research question in this study was *How does Facebook affect suicidal thoughts and gestures?* The authors started off by asking participants about their suicidal behavior. Nearly a quarter of the participants reported suicidal thoughts. Specifically, 23 percent stated that at least once in the last year they had thought about committing suicide and 4.1 percent of the total sample stated had attempted suicide in the past. A t-test revealed no significant

differences between those who had attempted suicide and those who had not with regard to feeling more depressed because of Facebook friends' comments, cutting more often, or desire to self-injure when Facebooks friends post about self-injury.

Discussion

In 2017, Facebook had over 2 billion active members (Statista, 2017). For many people, social media has become a daily part of staying connected with friends, families, co-workers, and even strangers. According to the Pew Research Center (2014), 64 percent of those with Facebook accounts visit the site daily, and membership among teens and young adults remains high despite the growing popularity of other social media sites. The results of this study indicate that college students regularly come in contact with people with depression, anxiety, or suicidal thoughts through Facebook. As well, while many students find comfort and social support on social media there may also be a type of social contagion for vulnerable individuals when they come in contact with someone describing suicidal or self-injurious behaviors (Jarvi, Jackson, Swenson, & Crawford, 2013). According to the current study, nearly 20 percent of students reported feeling more depressed or anxious when their friends post online about personal anxiety or depression. However, 57.4 percent said that they experience an increase in happiness when their Facebook friends post happy or uplifting comments. In other words, negative experiences shared online can cause others to feel down, but more people are likely to experience a sense of shared happiness when their online friends are also happy.

One of the primary purposes of this study was to measure the impact or "social contagiousness" of posts about self-injury on Facebook. Previous studies have found that self-injury does have a socially contagious element (Jarvi, Jackson, Swenson, & Crawford, 2013; Swannell et al., 2010). This phenomenon is not unique to self-injury. It has been observed in drug use and eating disorders as well. For example, anorexia nervosa has been well documented to produce social contagion. When individuals with the disorder post images of their bodies, it can act as a "trigger" to other people also suffering from anorexia (Rosenburg & Kosslyn, 2011). Many YouTube videos featuring images of people with anorexia include a trigger warning label to alert others that they may want to avoid viewing as it could result in anorexic urges or behaviors. The results of the current study found that a significant relationship existed between getting ideas for self-injury from Facebook and cutting more when Facebook friends post about cutting. The number of participants who reported getting ideas from Facebook about how to hurt themselves was relatively low (4.9 percent), yet just over 11 percent said Facebook makes them feel more depressed. Interestingly, just over 6 online of the participants acknowledged having ever been diagnosed with Major Depressive Disorder. This means that almost twice as many people as those actually diagnosed with depression feel depressed because of Facebook.

Social media sites like Facebook are ever increasing in popularity. According to this study, Facebook may be beneficial to the mental health of many, but for some it may lead to more incidents of self-injury. Very little research has been done on this topic and more certainly needs to be done. A major limitation of this particular study was the small and limited sample size. These results may not be generalizable to the world-wide population of social media users. These authors recommend that researchers continue to study social contagion in social media.

Further, mental health professionals, educators, and prevention specialists need to be aware of the influence of social media in the lives of young people, and prevention experts need to target social media friends in the same manner as they would other "peers" when talking to teens and young adults about social circles and personal mental health. Mental health professionals have long known that friends, family, and acquaintances influence their clients' behavior and

emotions; treatment plans generally include a social support component. Yet, social media may be so new that it is being overlooked. Professionals need to ask young people about their online social activity and encourage them to seek mentally healthy online relationships. Social media is not going away any time soon, and professionals need to include this virtual world of friends as part of their clients' social circles.

References

Adler, P. & Adler, P. (2008). The cyber world of self-injurers: Deviant communities, relationships, and selves. *Symbolic Interaction, 31*(1), 33–56. doi:10.1525/si.2008.31.1.33

Akyuz, G., Sar, V., Kugu, N., & Dogăn, O. (2005). Reported childhood trauma, attempted suicide and self-mutilative behaviour among women in the general population. *European Psychiatry, 20,* 268–273. doi:10.1016/j.eurpsy.2005.01.002

Ali, Amialchuk, & Dwyer. (2011). The social contagion effect of marijuana use among adolescents. PLoS ONE 6(1): e16183. https://doi.org/10.1371/journal.pone.0016183

American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders 5th edition*. American Psychiatric Publishing: Washington, D. C.

Brown, R. C., Fischer, T., Goldwich, A. D., Keller, F., Young, R., & Plener, P. L. (2017). #cutting: Non-suicidal self-injury (NSSI) on Instagram. *Psychological Medicine,* 1–10. doi:101017/S0033291717001751

Christakis, N. A., & Fowler, J. H. (2008). The collective dynamics of smoking in a large social network. *New England Journal of Medicine, 358*(21), 2,249–2,258.

Gladwell, M. (2000). *The Tipping Point: How Little Things Make a Big Difference.* Boston: Little, Brown, and Company.

Guan, K., Fox, K. R., & Prinstein, M. J. (2012). Non-suicidal self-injury as a time-invariant predictor of adolescent suicidal ideation and attempts in a diverse community sample. *Journal of Consulting and Clinical Psychology, 80*(2), 842–849. doi:10.1037/a0029429

Hallab, L., & Covic, T. (2010). Deliberate self-harm: The interplay between attachment and stress. *Behavior Change, 27*(2), 93–103. doi:10.1375/bech.27.2.93.

International Society for the Study of Self-injury (2007). *Definitional issues surrounding our understanding of self-injury.* Conference proceedings from the annual meeting.

Jacobson, C., Muehlenkamp, J., Miller, A., & Turner, J. (2008). Psychiatric impairment among adolescents engaging in different types of deliberate self-harm. *Journal of Clinical Child & Adolescent Psychology, 37*, 363–375. Doi:10.1080/15374410801955771

Jarvi, S., Jackson, B., Swenson, L., & Crawford, H. (2013). The impact of social contagion on non-suicidal self-injury: A review of the literature. *Archives of Suicide Research, 17*(1), 1–19. doi:10.1080/13811118.2013.748404

Kerr, P. L., Muehlenkamp, J. J., & Turner, J. M. (2010). Non-suicidal self-injury: A review of current research for family medicine and primary care physicians. *The Journal of the American Board of Family Medicine, 23*(2), 240–259.

Krippendorff, K. (2003). *Content analysis: An introduction to its methodology* (2nd ed.). Philadelphia, PA: Sage.

Laye-Gindhu, A., & Schonert-Reichl, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the "what's and why's" of self-harm. *Journal of Youth and Adolescence, 34,* 447–457. doi:10.1007/s10964-005-7262-z

Lloyd-Richardson, E. E., Dierker, P. N., & Kelley, M. L. (2007). Characteristics and functions Of non-suicidal self-injury in a community sample of adolescents. *Psychological Medicine, 37*(8), 1183–1192. doi: 10.1017/S003329170700027X

Muehlenkamp, J. (2005). Self-injurious behavior as a separate clinical syndrome. *American Journal of Orthopsychiatry, 75*, 324–333.

Muehlenkamp, J., Claes, L., Havertape, L., & Plener, P. (2012). International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. *Child and Adolescent Psychiatry and Mental Health, 6(*10). doi: 10.1186/1753-2000-6-10

Murray, C.D., & Fox, J. (2006). Do internet self-harm discussion groups alleviate or exacerbate self-harming behaviour? *Australian e-Journal for the Advancement of Mental Health, 5,* 1–9. doi:10.5172/jamh.5.3.225

National Institute on Drug Abuse (2014). *National Survey on Health and Drug Use.* Retrieved from http:// https://www.drugabuse.gov/national-survey-drug-use-health.

Nixon, M.K., Cloutier, P., & Jansson, S.M. (2008). Nonsuicidal self-harm in youth: A population-based survey. *Canadian Medical Association Journal, 178,* 306–312. doi:10.1503/cmaj.061693

Nock, M., & Prinstein, M. (2005). Contextual features and behavioral functions of self-mutilation among adolescents. *Journal of Abnormal Psychology, 114*, 140-146. doi:10.1037/0021843X.114.1.140

Nock, M., Prinstein, M., & Sterba, S. (2009). Revealing the form and function of self-injurious thoughts and behaviors: A real-time ecological assessment study among adolescents and young adults. *Journal of Abnormal Psychology, 118*, 816–827. doi: 10.1037/a0016948

Pew Research Center (2014). Six new facts about Facebook. http://www.pewresearch.org/fact-tank/2014/02/03/6-new-facts-about-facebook/

Purlington, A., & Whitlock, J. (2010). Non-suicidal self-injury in the media. *The Prevention Researcher, 17*(1), 11–13.

Rosen, P., & Walsh, B. (1989). Patterns of contagion in self-mutilation epidemics. *The American Journal of Psychiartry, 146,* 656–658.

Rosenburg, R. S., & Kosslyn, S. M. (2011). *Abnormal Psychology*. Worth Publishers: New York Shaffer, D., & Jacobson, C. (2009). Proposal to the DSM-V childhood disorder and mood disorder work groups to include non-suicidal self-injury as a DSM-V disorder. American Psychiatric Association. *http://www.dsm5.org/pages/default.aspx.*

Statista (2017). Number of monthly active Facebook users worldwide as of 1st quarter 2017(in millions) https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/.

Swannell, S. V., Martin, G. E., Krysinksa, K., Kay, T., Olsson, K., & Win, A. (2010). Cutting On-line: Self-injury and the internet. *Advances in Mental Health, 9*(2), 177–189.

Swannell, S. V., Martin, G.E., Page, A., Hasking, P., & St John, N. J. (2014). Prevalence of nonsuicidal self-injury in nonclinical samples: Systematic review, meta-analysis and meta-regression. *Suicide and Life-Threatening Behavior, 44*(3), 273–303. doi:10.1111/sltb.12070

Whitlock, J., Muehlenkamp, J., Purington, A., Eckenrode, J., Barreira, P., Baral Abrams, G., et al. (2011). Nonsuicidal self-injury in a college population: General trends and sex differences. *Journal of American College Health, 59*(8). 691–698. doi:10.1080/07448481.2010.529626

Corresponding Author: Sharon J. Davis
Email: sharondavis@astate.edu