

D.U.Quark

Volume 5
Issue 1 *Fall 2020*

Article 5

12-21-2020

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Meaghan Gleason

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Recommended Citation

Gleason, M. (2020). Social Media and Electronics' Impacts on Psychological Well-being. *D.U.Quark*, 5 (1). Retrieved from <https://dsc.duq.edu/duquark/vol5/iss1/5>

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Social Media and Electronics' Impacts on Psychological Well-being

By Meaghan Gleason

D.U. Quark 2020. Volume 5 (Issue 1) pgs. 41-50

Published December 21, 2020

Peer Reviewed

Abstract

The use of electronics, specifically social media, has grown immensely in recent years along with the increase of mental illness, thus implying a possible correlation between the two. The use of digital media may have serious impacts on the psychological well-being of adolescents, teenagers, and adults. This review will focus on the specific psychological impacts that electronics and social media have on adolescents, along with the contributions social media has to the development of depression in all ages, and how language use can be accurate predictors of common mental conditions. It is unclear why depression, anxiety, bipolar disorder, sleep disorders and Attention-Deficit/Hyperactivity Disorder (ADHD) are becoming so prevalent. The underlying causes of these conditions must be discovered, and prevention techniques must be implemented for future generations.

Keywords: social media, mental illness, depression, electronics, adolescents

Introduction

As the internet has progressed, many websites and applications have been created that allow users to share their content with other people, as well as see other people's content almost instantaneously. These sites and applications are now known as social media platforms. Within the past 20 years, adolescents and adults have been spending more time on electronics and social media platforms than they have in the preceding years. Uncoincidentally, mental illness has also grown to be more common within these recent years as well¹. This is because electronic use and social media have been linked to having significant negative impacts on the psychological well-being of children² and adults³. For example, a study was performed on 1,787 young adults between the ages of 19 and 32 and it was found that social media is a likely cause of some mental disorders such as anxiety, depression, and sleep disorders³. While it is apparent that social media is influencing mental conditions, it is difficult to quantify the contributions that social media has towards the decline of mental health versus the contributions of outside factors. Individuals could easily avoid these conditions if it were known how to prevent them. The way in which an individual uses a given social media platform has a greater effect on mental illness than the platform itself. This makes it difficult to determine which social media platforms are the most detrimental to health. This review will discuss correlation studies between social media and electronics and their effects on adolescents' mental health, the contributions social media has on depression, and the predictability of mental health via language use on social media.

Effects on adolescents

Electronics

Electronics have been used more commonly as a form of entertainment for children, which has become problematic regarding their well-being. For instance, children were asked to report their overall well-being and happiness along with the time they spend on electronics⁴. The children who spent the most time on electronics reported the lowest overall well-being and happiness⁴. Aside from smartphones, children are also spending time on a computer, watching television, and playing video games⁵. Adolescents who spend more time on the internet are more likely to experience psychological distress, whereas adolescents spending more time playing video games are more likely to experience poor health and symptoms of anxiety and depression⁵. This decline in adolescent well-being may be attributed to the fact that spending more time on electronics takes away from time spent sleeping, experiencing face-to-face interactions, and exercising, which are all crucial components to the development of children⁶.

Regarding sleep disorders, electronics can greatly decrease a child's sleep quality and quantity. Melatonin is a hormone that is responsible for creating the circadian rhythm, which regulates an individual's cyclic sleep⁷, making melatonin crucial for sleep to occur. Because of this, spending time on electronics at night is especially harmful due to the blue light that is emitted from these devices⁸. This light can suppress melatonin levels in humans, making it significantly more difficult to sleep at night⁸. Since the availability of smartphones has also increased, this allows children to use electronics more often, specifically at night, which can lead to the development of sleep disorders⁹. Using electronics at night can be detrimental to the well-being of children since it is very likely for their sleep quality and quantity to decrease. These poor sleeping habits may worsen a child's overall well-being and could even evolve into a multitude of other health problems

Social Media

Social media has become more popular among children and is negatively affecting them. Back in 2005, which was right around the rise of social media, the program Teen-Screen screened 55,000 teenagers in the United States for mental health issues¹. Of these 55,000, approximately 18,000 were screened positive for mental health issues and almost 10,000 of them were referred for further evaluation¹. Between 2005 and 2017, there has been a 52% increase in major depressive episodes in adolescents.¹⁰ This may be attributed to using social media so often that it affected social interactions and resulted in mood disorders. Excessively using social media could negatively affect the psychological well-being, social skills, and even the development of children². Additionally, more problems and social issues will occur when an individual uses different social media platforms¹¹. Psychological problems correlate more with social media platforms such as Instagram, Snapchat, Tumblr, Facebook, Twitter, Google+, Discussion Boards, and Pinterest, but not with those who only spent time on Instagram and Snapchat¹¹.

Social media and its contributions to depression

Teenagers

As social media has become more common in recent years, teenage depression has also been seen to increase. In Scotland, teenagers that increase social media use, nighttime-specific social media use, and emotional investment in social media saw an increase in depression¹². Using social media before bed is also linked to developing depressive symptoms⁹. These studies have concluded that using social media specifically at nighttime is strongly correlated with developing depression.

An experiment performed on college students requested that they limit their social media use to 30 minutes total per day, and only 10 minutes a day per platform, as compared to a control group that used social media as much as they desired¹³. This resulted in students that limited their social media use being less depressed after only a week of limitations¹³. Of all the factors that have been researched regarding using social media, time spent on social media had the strongest correlation to the risk for depression¹⁴. These studies show that increasing the time spent on social media is positively correlated with increasing the risk of depression in teenagers.

Adults

Similar to teenagers, adult depression has also increased with the use of social media. A positive association has been found between time spent on social media and depression in adults¹⁴. Similarly, it has been shown that being addicted to the internet is likely to result in depression¹⁵. A study questioned 50 adults aged 18 to 65, 25 of them being depressed and 25 of them having no psychiatric history¹⁵. These groups were compared in terms of internet addiction, resulting in the depressed group scoring significantly higher than the control group¹⁵. As adults increase the time spent on social media, their depressive symptoms also tend to increase.

Interestingly, depressive symptoms are also seen to increase in adults as they increase the number of social media platforms that they use³. Once an adult is suffering from depression, they tend to look towards multiple different platforms for support, however, they just end up feeling more excluded and disillusioned³. Adults that are dependent on emotional support from social media are more likely to develop depression than adults that depend on face-to-face emotional support¹⁶. These studies show that using multiple different platforms is strongly

correlated to developing depressive symptoms in adults. Also, depressed adults that look to social media platforms for emotional support are more likely to suffer more than individuals who rely on face-to-face support.

Predictability of mental conditions

Although social media is classified as negatively impacting mental health, it does have an advantage. Digital media is being used to predict psychological problems in account holders¹⁷. One study focused on Facebook and identified common words used by people suffering from specific mental illnesses¹⁸. For example, account holders who have depression are more likely to use words such as pain, help, need, feelings, hurt, and crying in their posts¹⁸. The method used in this study was tested statistically and was found to be extremely close to being a very strong predictor of depression¹⁸. A similar conclusion was made on Reddit where the language is also predictive of mental conditions on both clinical and non-clinical subreddits¹⁹, which are smaller communities on Reddit where users post about a specific topic. As shown in Table 1, users can identify with ADHD, anxiety, bipolar disorder, or depression based on their language in past and current posts¹⁹. All of these mental conditions are predicted based on language with an accuracy of 70% or greater¹⁹. Mental conditions can also be predicted is using semantic density via Reddit¹⁷. These users suffering from psychosis struggle to string words together to create higher-order meanings¹⁷. After studying these users' posts, the predictions of psychosis based on semantic density were 87% accurate¹⁷.

Table 1. Common words used on Facebook, Twitter, and Reddit that predict different mental conditions.

	ADHD	Anxiety	Bipolar Disorder	Depression
Alcohol		✓		
Anxiety	✓	✓	✓	
Attack	✓	✓		
Crying	✓			✓
Depression	✓	✓	✓	
Drink	✓	✓		
Feelings		✓		✓
Health	✓	✓	✓	
Help		✓		✓
Hospital	✓			✓
Illness	✓		✓	
Medications	✓	✓	✓	
Mental	✓		✓	
Pain				✓
Panicked	✓	✓		
Pills			✓	
Smoke	✓	✓		
Stress	✓	✓		
Stomach				✓

Not all studies took every word shown into consideration

Created from references ^{18, 20-23}

This is a major discovery in this field as it is a step in the right direction to helping people identify their mental illnesses. Facebook has already implemented this research by allowing users to flag posts on their feed that may come across as suicidal¹⁸. Facebook then sends the

flagged user resources for depression and suicide¹⁸. Hopefully, this research can continue to move forward and more systems can be implemented where social media platforms automatically notify a user if their posts continuously use words that have shown to identify with a specific mental illness, as table 1 shows. The predictability of mental illnesses through social media is very important to today's population in decreasing the mental illness epidemic.

Conclusion

Social media has a plethora of connections to the psychological well-being of today's population. As electronics and social media are becoming more accessible to children, their psychological well-being will most likely decrease due to digital media's negative effect. Also, as social media has contributed to the development of mental conditions such as depression, anxiety, and sleep disorders, an increase in these conditions in the general population is bound to happen as the use of social media continues to rise. However, researchers are using social media to move in a positive direction by creating systems to identify possible mental conditions the social media users may be suffering from. These systems are primarily based on the language of the users' content. Since social media has just recently become popular in the past years, research still needs to be conducted over a long period to determine just how significant social media is regarding mental health, as well as find a threshold for social media before it has negative impacts. More specific studies should be conducted to discover if the content users are reading contributes to psychological issues as well. It is unclear whether today's society is impacting mental health, or the problem specifically is social media.

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Gleason, M. (2020). Social Media and Electronics' Impacts on Psychological Well-being. *D.U.Quark*, *5* (1). Retrieved from <https://dsc.duq.edu/duquark/vol5/iss1/article5>