Potential Causes of the Recent Rise in Adolescent Depression: Why Adolescents Today are More Depressed than Before

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Abstract

Rates of adolescent depression, along with rates of adolescent self-harm and suicide, have risen significantly within the past two decades. Despite this disturbing rise with severe consequences, we still do not know exactly what this rise entails, or what it has been caused by. There are several strong correlates of adolescent depression as well as many hypotheses as to why we are observing this rise. This paper discusses these correlates as potential causes and views each one in the vulnerability-stress framework. The strongest correlates came out to be technology use, social media use, and substance abuse. This paper creates a comprehensive list of the potential causes of the recent rise in adolescent depression. However, it is also worth considering that increased mental health awareness has simply led to more adolescents presenting to hospitals with their condition, which has led to an apparent rise in rates of depression. Nevertheless, increased efforts are necessary to bring more cases to light as a significant portion of the cases of adolescent depression go unreported.

1 Introduction

Adolescent depression is characterized by sad, empty, irritable, or depressed mood in adolescents, and it can hinder one's ability to function ([DSM]). Although depression is highly responsive to treatment, adolescent depression has low rates of recognition and diagnosis [fleb]; [Ado]. However, adolescent depression is important to discuss because it can lead to self-harm, suicidal ideation, lower educational attainment, increased criminal activity, increased substance use disorders, and low employment or capital accumulation later in life ([Haw]; [fleb]; [Arg17]). Since 2005, there has been a 37% increase in adolescent depression, and since 2011 there has been a 60% increase ([Fei]; [Twe]). As overall rates of adolescent depression have increased, adolescent presentations

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to hospitals for cases of self-harm or suicide attempts doubled ([Twe]). The rates of girls visiting a hospital for self-harm tripled from 2009 to 2015 ([Twe]). Suicide is the third leading cause of death in adolescents ([Gala]). Not only is depression a debilitating disorder with severe consequences for young people, it is also expensive: approximately 71 billion dollars a year are spent treating depression in the US ([Win]).

To treat depression, recognizing its causes in each patient is necessary. Many factors may play a role in causing depression, such as genetic vulnerability or significant negative life events such as the death of a loved one ([Han]). However, one factor alone cannot be the seed of a person's depression. Like a plant, the growth of depression requires several supporting factors. A genetic or biological predisposition makes a rich soil. The daily water supply may come in the form of bullying at school or social pressure. The sunlight could be similar to the water. The technical term for the soil is vulnerability, and the term for the water and sun is stressors, or stress. When analyzing causes of adolescent depression, this vulnerability-stress combination framework is necessary to get a complete picture of the causes of depression on a group or individual level.

The vulnerability-stress framework sees adolescent depression as being caused by vulnerability and stress. There are several kinds of vulnerabilities. Genetic vulnerability is the biggest factor in predicting depression ([Han]). Personality or temperamental vulnerability is also a big factor, as well as cognitive and biological vulnerability ([Han]). However, for adolescents, the biggest common vulnerability is biological, as adolescent depression is correlated with pubertal phase ([Han]; [Haw]).

The second key factor that affects depression in the vulnerability-stress framework is the stressor. Stressors are significant events that induce stress on a person's mental state, such as the death of a loved one, trauma, or bullying. Research has shown that nearly all depressed individuals have experienced a significant negative life event a month before the onset of their depression ([Han]). Research has also shown that stress is bi-directional ([Han]). This means that, when an individual experiences a stressor, it may lead to him or her creating more stressful circumstances for him or herself or his or her surroundings, leading to the worsening of the affected person's condition.

However, it is still not yet clear how these stressors may affect adolescent depression specifically. Stress is correlated with depression, which increases throughout adolescence, beginning at puberty ([Han]). Although the rate of depression has been increasing over the generations, the stressors that have led to this increase have not yet been explicitly explored. In this paper, we assess four major stressors that could have increased the rate of depression among the youth today compared to the adolescents of the previous generations: schoolwork, social pressure, technology, and substance use.

2 Results

2.1 School-related Stress

Stress is a very powerful cause of depression ([Han]; [Harb]; [Lal]). Among adolescents, one of the greatest sources of stress is schoolwork and heavy schoolwork burden ([Lal]; [Arg17]; [Galb]). It is widely agreed that students today have too much homework ([Marb]; [Hom]) and that homework brings stress, conflict, and fatigue to students ([Marb]; [Hom]; [Galb]). In one study, students who reported schoolwork stress were three times more likely to be depressed than those who did not ([Arg17]).

This trend appears to be consistent across cultures. In a study on adolescent Canadian children (average age 14), depressive symptoms were positively correlated with schoolwork stress but negatively correlated with academic achievement ([Arg17]). Another study on Chinese highschool students reported similar results, as stress from homework and lack of achievement is positively associated with depressive symptoms ([Liu]). In Korea, high academic stress was found to correlate with high rates of clinical depression, nearly double that of American students ([Lif]).

Schoolwork stress is experienced by many students ([Lal]; [Arg17]; [Galb]). This stress may vary from country to country in terms of degree, as Asian countries like Korea tend to have higher academic pressure than the US ([Lif]). However, this difference in degrees of stress does not take away from the fact that schoolwork stress is a correlate of depression and that increased academic pressure may be a cause of depression in adolescents.

2.2 Technology

Another factor that could contribute to the increase in adolescent depression is technology. Heavy time spent on technology is a stressor that is correlated with the increase in adolescent depression rates ([Twe]; [die]). As mentioned before, between 2011 and 2018 there has been a substantial increase in adolescent depression ([Twe]). This time-frame coincides with the increasing availability of smartphones and mobile devices, on which the majority of adolescent technology use takes place ([die]). As seen on the graph below ([Twe]), male and female rates of depression were relatively constant until 2010 before increasing rapidly to double the percentage of females with high depressive symptoms by 2017 accompanied by a sudden spike in males [Figure 1].

Increased use of technology, specifically digital media, has been correlated with lower psychological and general physical well-being ([Twe]; [die]; [Wu]). Heavy use of smartphones or the Internet is correlated with higher rates of depression ([Twe]; [Woo]).

Social media, such as Twitter, Snapchat, or Instagram are special because notifications from these apps come in at all times of the day, making it difficult for one to escape ([Woo]). This is reflected in a study by Savci and Faysan, in which they concluded that internet addiction negatively impacted

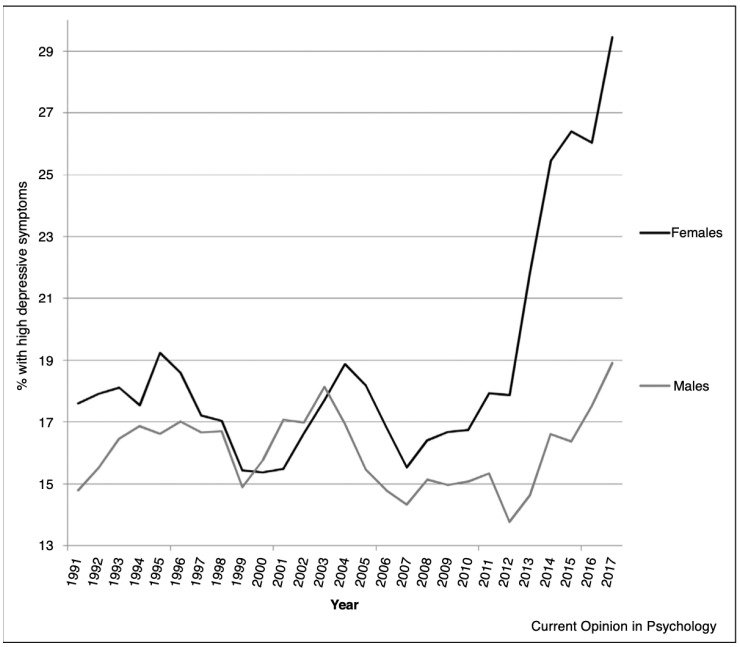

Figure 1: [Twe]

social connectedness ([Sav]). Increased time spent on the Internet is associated with decreased duration of sleep and bad sleep quality, which is strongly correlated with increased anxiety, depression, and decreased overall well-being ([Woo]; [Tsu]).

Overall, there is extensive evidence to show that increased technology usage could have contributed to the rapid increase in the rate of depression. There may have been many mechanisms that have led to this relationship. First, the use of electronic devices itself may have an impact. Adolescents who spend 5 or more hours a day on electronic devices are 66% more likely to have at least one risk factor for suicide than adolescents with only 1 hour of time on electronic devices ([Twe]). Second, digital media decreases face-to-face interactions ([AS10]; [Twe]). This is particularly a problem because digital interactions cannot truly replace face-to-face interactions ([Wu]). Even if a person is well- connected online, he or she is still at risk of depression if he or she solely or heavily depends on online interaction to fulfill his or her need for social interaction ([Twe]). This can also affect non-social media users, in that face-to-face time has decreased at the group level among adolescents ([Twe]). Third, excessive time spent on the Internet is strongly associated with decreased duration of sleep and bad sleep quality, which is strongly correlated with increased anxiety, depression, and decreased overall well-being ([Woo]; [Tsu]).

Social pressure is another important technology-related stressor that causes depression. Young people spend 54% of their time online on social media like

Twitter or Facebook ([Woo]). These platforms keep society connected at all times, for better or for worse. Thus, the best way to escape this constant social pressure online is to discontinue one's use of the Internet, which for many people is not an option. This has forced nearly everyone in the world to join the online community, including adolescents. Children from the age of 12-15 are more susceptible to negative social cues such as alienation, ostracism, and the expectations of others ([Haw]). Due to large participation in social media among adolescents, exposure to negative social feedback may have increased. This age range from 12-15 years is correlated with the onset of self-harm, which more than half the time will lead to recurrent episodes of self-harm ([Haw]). Negative social pressure at this age can more readily influence mental health and self-harm behavior in adolescents ([Haw]). Rejection in this age range is particularly significant because children in the pubertal phase are more likely to make negative inferences about themselves, explaining why this age range is special ([Haw]). Self-esteem has been shown to be related to feedback on social media, either increasing or decreasing depending on the positive or negative nature of the feedback. Low self-esteem is reported in adolescents who have harmed themselves ([**?**]). This effect is easily explained by the vulnerability-stress framework, in which pubertal onset would be the underlying vulnerability and frequent use of social media and therefore more social pressure would be the stressor. This may explain the increased rates of depression in adolescents compared to pre- adolescent children ([Harb]; [Haw]).

Regardless of the exact mechanism, research shows that technology has an impact on the depression rates among the youth today. Adolescent technology use has increased, and they spend a large amount of their time on social media when using devices. This leads to several negative outcomes: increased loneliness, loss of sleep, and more negative social pressure, all of which are strongly correlated to feelings of depression, loneliness, and anxiety.

2.3 Substance Use

The final factor that we will discuss as a contributor to rising levels of depression is substance use. Research has consistently found a strong relationship between substance use and depressive states ([chi]; [AC02]). For example, between 50 and 80% of all substance abusers meet criteria for at least one other psychiatric disorder, and this trend is also seen in adolescents ([AC02]). Adolescents may use substances to cope with depressive symptoms, or depressive symptoms may be caused by their substance use. No matter their relationship, substance use and depression indubitably have a strong correlation, as the rate of depression in abstaining adolescents (5%) increases to 20-30% in adolescents who use drugs regularly ([chi]; [AC02]). Highschoolers regularly use substances such as alcohol, marijuana, and tobacco ([Cha]), and there has been a documented increase in adolescent substance use in recent years ([chi]). This may be a cause of the apparent increase in adolescent depression rates.

One substance that may have affected today's adolescent depression is alcohol. It is consumed widely among high schoolers, with some studies showing

that nearly 75% of high schoolers consume alcohol by the end of high school, and 45% of high school seniors report having consumed alcohol in the past month ([Cha]). One study importantly found that 15-16 year old's who drink alcohol are twice as likely to be depressed as non-users ([Crob]). Another study found that alcohol use is related to suicidality and depression ([Gala]). Adolescent depressive symptoms are positively correlated with alcohol consumption ([**?**]).

Another possible substance is tobacco. Tobacco use is also widespread among highschoolers, with nearly 1 in 4 reporting to using tobacco products ([Sin]). Although cigar and cigarette use went down, the use of e-cigarettes and other tobacco products went up, resulting in a constant or slightly decreasing level of tobacco product use ([Sin]). Depressive symptoms in adolescents are predictive of tobacco initiation, and tobacco use is particularly harmful in the adolescent stage and may lead to 5.6 million premature deaths in adolescents under 18, according to the CDC (Centers for Disease Control) ([Sin]).

Finally, the third possible substance is marijuana. Marijuana use correlates with depression as well as social anxiety ([Med]; [Mara]). Marijuana use is increasing in adolescents, and adolescents are particularly vulnerable to the co-occurrence of depression and marijuana use ([Rel]). Many teens self-prescribe marijuana use as a means of relief or treatment for their anxiety or depression because they feel they have no other options for treatment ([Rel]), but marijuana use can worsen depression and may lead to other psychiatric disorders, such as anxiety ([Rel]. Thus, it is important to prioritize adolescent mental health, especially for highly treatable disorders such as anxiety and depression, in order to prevent exacerbation of the condition when it goes unreported.

Substance use and depression have high rates of comorbidity in depressed adolescents. Many use substances to cope with their depressive symptoms, which they may be experiencing because of schoolwork or social stress. However, use of substances does not increase psychological well-being and often worsens it. To stop this vicious cycle of worsening depression, more efforts need to be made to find and treat cases of depression in adolescents.

3 Conclusion and Discussion

Rates of adolescent depression have increased in recent years. Schoolwork stress, increased technology use, and substance use are all correlates of depression in adolescents. Each of these may be a factor in the recent increase in adolescent depression. Each of these factors are observed in high levels among adolescents and are correlated with depressive symptoms and depression in adolescents.

In this paper, we have discussed the increase in adolescent depression, its correlates, and potential causes. We examined the causes of adolescent depression from a vulnerability-stress framework. We analyzed the correlation between school-related stress and more specifically the role of homework in creating school-related stress and found that more homework is related to increased stress, and increased academic pressure is correlated with higher levels of depression and anxiety. We then looked at technology use as a particularly strong

candidate to be a cause of the rise in adolescent depression and found that increased time spent on technology was correlated with lower social connectedness and increased loneliness. Along with technology use comes constant social pressure on social media, which adolescents use heavily, and we found that negative social feedback on social media is associated with lower self-esteem which is correlated with self-harm and depression. Third, we discussed the roles of drug use in adolescents. Specifically, we addressed its high rates of comorbidity with mental disorders, especially internalizing disorders such as anxiety and depression.

Marijuana use has gone up in recent years, making it a potential driving factor in the increase in depression rates. Technology use among adolescents has also increased substantially within the past decade and even more in the past couple of months with the onset of online school. With the increase in technology use comes the increase in social media use, which can lead to more social connectedness, especially when face-to-face meetings are not an option, but it can also lead to more feelings of loneliness and depression because it cannot replace in-person interaction. This stressor of depression has become especially relevant in recent months with school starting to go virtual and in-person meetings becoming scarce. In-person interaction time may be at an all-time low given the new virtual environment. The role of online school should be further investigated as it relates to adolescent depression and loneliness. If adolescents are spending more time than before on their devices, either to social network or attend school, then more efforts to raise awareness of mental health awareness are needed, specifically among parents who may dismiss their child's depressive symptoms as 'just a phase.' Many cases of depression or mental health in adolescents go unreported, meaning that the numbers we can see right now are not completely accurate. It is possible that increased awareness led to the apparent increase in adolescent depression. It is important to beat the stigma surrounding mental health issues so that adolescents are not afraid to address their issues.

This study is significant because it provides a comprehensive list of the major correlates of adolescent depression that may have led to its recent rise. This study adds to the field of clinical psychology by adding valuable information about risk factors in adolescents for depression to the current literature. However, this study is limited in that it is mostly correlational and not causational. Despite this limitation, this study is the first to look at several potential causes of the increase in adolescent depression. These findings should be applied in school settings, clinical settings, and even homes in order to spread more awareness about the risk factors associated with depression in adolescents. If this research is used to spread awareness about mental health, it may lead to more adolescents getting the treatment they need and decrease the high rates of depression in adolescents.

4 Methods and Materials

This project was conducted solely through online research on scholarly databses. No materials besides the internet and research databases were used. The majority of the studies referenced are correlational.

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