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The Modulation Mechanism of Social Media Abuse on Depression Symptoms

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Abstract: During the past few decades, mental health problem is causing an increasingly attention among different groups of people. Since mental health problems is frequently influencing people's regular life, it is important to study the underlying reasons of causing them. This paper aims to review the relationship between social media abuse and depression among youth. In the paper, three most important reasons: negative social comparison, social isolation and low sleep quality were discussed to explain the core mechanism between social media and depression. It is important that knowing more about the underlying reasons of depression helps to develop more possible future treatments about this disease.

1. Introduction

Depression is a kind of medical illness that negatively influences people's psychosocial functioning and qualities in their daily life [1]. Common symptoms of depression include: frequently feeling sad, having a depressed mood, loss of interest in activities once enjoyed, and other negative symptoms. Once these symptoms have last for at least two weeks, they will have apparent impacts on normal life and feelings. Therefore, depression is a serious mental problem that needed to be emphasized nowadays.

Although the rapid development of technology brings us with both positive, it also has the negative influence on the problem of mental health. Social media is taking a larger and larger proportion in people's daily spare time. However, using social media too much also brings many negative influences to people's daily life, especially to teenagers. The American Academy of Pediatrics (AAP) has released a report stating that exposure to Facebook, a popular social media, could lead to depression [2].

While WHO ranked major depression as the third cause of burden of disease worldwide in 2008 and predicted that it would rank first by 2030, figuring out the underlying reason how social media abuse contribute to depression was an important topic to focus [1]. This paper aims to review how the negative influences bring by social media contribute to depression. We focused on teenagers as a target group, because teenagers take a relatively big proportion in the overall number of internet users, and they also tend to be more vulnerable in this situation. Since depression is a serious mental health problem which can cause huge damage to people's ordinary life, understanding possible

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causes of depression can give us more insights of how to treat this mental problem, as well as how to prevent depression in our daily life. This paper examined the possible underlying reasons and also provided suggestions to these problems.

2. Literature Review

While studying the relationship between social media abuse and depression, there were many different perspectives to be considered. The most basic problem to be answered is whether social media abuse is related to depression, and what are the possible underlying reasons that cause this relationship. To discuss further, whether these influences is direct or indirect and how these factors have worked is an important topic that many previous researches have focused on. Many researches have already discussed about social media abuse and depression before, and they have various answers to this topic.

To solve the most basic problem of whether there is a relationship between social media abuse and depression, Lin and his colleagues used a survey from 1787 U.S. adults between 19 to 32 and found that social media use was significantly associated with increased depression [3]. Similar patterns have been found by Betul and his colleagues that there is synthesized evidence on the influence of social media use on depression and other mental health problems in adolescents [4].

Based on the fact that social media abuse is related to depression for teenagers, the underlying reasons are important in explaining this relationship. There are many reasons from different perspectives that contribute to depression. Since depression is a mental health problem that is also closely related to daily behaviours, both psychological and physical reasons should be considered in studying this problem. Among the previous researches, the three most focused topics in previous researches were social comparison, social isolation and low sleep quality. Sunkyung and his colleges found the relationship between social media abuse and depression in terms of social comparison [5]. Several researches also showed similar patterns between social comparison and depression. Besides the internal reason of self-recognition, there were also external and physical factors that could lead to depression. Previous researches focused on the relationship between social isolation and depression. During the Covid-19 period, depression was an important psychological disorder to be considered due to the long isolation period. People were keeping touch with each other only through social medias. Researches showed that self-distance and social isolation during the isolated period would have substantial negative changes in individual behaviours [6]. Besides the special context of Covid-19, daily social network abuse also has similar effects of causing social isolation, which contribute to depression. Physical factors played an important role in this relationship. Toms and his colleagues found “disordered” social media users showed poorer wellbeing in terms of their sleep duration and loneliness than non-disordered users [7]. Reduced sleep quality is another interacting factor that caused by social media abuse and indirectly contribute to depression. Based on these previous researches, this paper would further elaborate explain how these three aspects have influenced depression in the following paragraphs.

3. Negative Social Comparison Adds to Depressive Moods

Previously, many researches have emphasized how negative social comparison brought by social media abuse contribute to depression. Edson and his colleagues used Facebook as a typical social media app and collected data from 736 college students in their study. From their research, they concluded that social media use could cause envy between college students, which directly led to depressed symptoms. Other researchers also came up with similar conclusions between negative emotion caused by social media [8]. In Chou’s paper “They are happier and having better lives than I am”, he stated that one feature of social media is that it enables people to maintain their positive

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profile online even if it is not the truth. As a result, people were more likely to perceive that others were happier and are having better lives while were less likely to agree that life is fair. In this way, social media caused emotion of envy as well as self-abasement, which was a casual factor of depression among young adults [9]. Similarly, Appel, Crusius and Gerlach discussed the how underlying social comparison led to low self-esteem and cause depressive mood. They used Facebook as a typical platform of social media and studied how Facebook usage had influenced depressive moods. It turned out with similar findings with Chou's research that "the frustration of logging into an OSN and being flooded with friends' notifications showing perfect happiness and flawless lives" brought aversive feedback to individuals. And this kind of frustration largely contributed to negative social comparison and envy between young adults. Many previous studies have found that there is a positive relationship between envy and depression [10]. All these researches showed us with a similar pattern that social media abuse would cause negative social comparisons and negative feelings about themselves. When people see the good lives and things others own, a sense of disappointment of their own life will appear. This feeling can be transferred into envy and self-abasement, which results in negative psychological hints. These negative hints would contribute to depressive moods gradually. Therefore, social media abuse confirmed to be related to depression indirectly through negative social comparisons emotionally.

4. Social Isolation From Social Media Abuse Generates Depressive Behaviors

Besides psychological factors about social media, another problem it raised is social isolation. Abusing social media means a large amount of decrease in social activities and interactions with others in realities. Kawada and Tomoyuki discussed how loneliness from social isolation influence a person's daily behaviours and gradually transferred into depression. They emphasized that lack of social interactions in reality would generate communication problems of a person and disturb their daily life behaviours [11]. The disturbance of communication in reality makes it hard for a person to get connected with others, generating a sense of loneliness or other depressive moods. Abusing social media was one of the reasons of this kind of social isolation. When a person was obsessed with the internet, he would gradually isolate with the reality. If this situation continues for a long time, his daily behaviours would be severely restricted by the communication problems. Similarly, Timothy and his colleague stated that "the perception of being cut off from social groups makes individuals feel vulnerable, triggering a range of cognitive, behavioural and physiological responses geared towards self-protection" [12]. After feeling isolated from the reality, people tended to use social media more in order to fulfill self-protection and escape from pressures. This effect created a vicious cycle and enhanced depressive moods and behaviours. Puri and Ritu did further researches about how internet usage had influenced social isolation and psychological disorders. They surveyed 100 senior secondary students between 16-18 years in India and did Internet Addiction Test, UCLA, Beck Depression Inventory and Social Isolation Scale tests. After analyzing the data which they collected, conclusion had been drawn that internet addiction was positively related to depression, loneliness and social isolation [13]. Their finding gave us another insight about social media abuse, social isolation and depression. In their study, they did not view social isolation as a causal factor of depression directly, but as an accompanied negative consequence with depression after internet abuse. In other words, they thought that social media abuse would directly cause both depression and social isolation separately. While most of previous researches showed a causal effect between social isolation and depression, this research gave us a more complete understanding that social isolation and depression caused by social media abuse was interacting with each other.

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5. Poor Sleep Quality Interacts with Depression

A third factor to be discussed was the decreased sleeping quality caused by social media, which also contributed to depression. Poor sleep quality is not only a symptom of depression, but also a reason which causes depression. Researches showed that abusing social media was closely related to poor sleeping quality and reduced sleep duration. Increased Internet use was associated with shorter sleep duration, later bedtimes and rise times, longer sleep latencies and increased daytime tiredness according to Garmy and his colleagues [14]. Data also showed that among 268 young adolescents being surveyed, 37% reported losing sleep due to the use of social networking site [15]. Sleep interruptions increased the feeling of tiredness and lack of energy in participating in other activities, which played a negative role in a person's daily well-being. People in a low mood and less energy usually had less motivations in their daily life, which would cause depressive behaviours. Besides the direct relationship between social media usage and decreased sleep quality, the emotional investment in social media usage also suggested that it is a reason for young people struggle to relax at bedtime [16]. The emotional disturbance caused by social media usage not only directly contributed to negative feelings, but also caused young people hard to fall asleep at night. From this perspective, poor sleep quality was not only a physical factor which causes depression, but also a psychological reason that led to this disease. It combined both physical disturbance and negative feelings. For physical disturbance, it influences people's daily motivation and behaviours, which acts as an indirectly reason that cause depression. For psychological influence, it directly causes people to generate depressive moods and negative emotions. These reasons could explain how social media usage cause the reduce in sleep duration and quality, which both directly and indirectly contribute to depression.

6. Conclusion

From the above analysis, we can see that the abuse of social media actually cause depression from many perspectives. More specially, three reasons mainly come from personal cognition, external influence and physical factor. Although social media abuse is not a direct source of causing depression, the indirect thoughts and impacts it brings lead to depressive moods and behaviours.

Negative social comparison is a self-cognition reason of depression. While people use social media too much, fake images of others' perfect live on social media gives users bad feelings of their own lives. As a result, negative social comparisons bring them with self-abasement and envy towards others. Researches showed that self-abasement and envy both contributed to depressive moods and feelings, explaining why social comparison could cause depression. Apart from social comparison, social isolation is the external factor of causing depression. Using social media too much can reduce the time people spend in reality, which prevents them from interacting with others. However, long time of social isolation may cause many negative problems and influence daily lives. Lacking communication with others makes people feel hard to talk to others in reality. Also, staying at home too much makes people feel isolated with the society, which generate a feeling of loneliness. These feelings play important roles on the depression. The poor sleep quality as the physical factor caused by social media abuse influence mental health in the way of decreased energy in daily life and reduced motivations in life.

In sum, social media abuse is related to depression from many perspectives. And this paper finds that negative social comparisons, social isolation and poor sleep quality due to social media abuse are the three most important factors that cause depression.

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7. Limitations and Future Directions

Despite the fact that previous researches have provided us with many insights of the relationship between social media abuse and depression, there are still some limitations to these researches that need to be discussed in future studies.

In terms of negative social comparisons, more information about personality should also be considered. Since negative feelings (i.e., envy and self-abasement) varied from person to person, whether these feelings could lead to depression was also related to their different personalities. However, previous researches did not talk much about this problem. Also, the data collected about those depressive moods could not be counted merely by social media abuse. Other situations might also relate to these negative feelings, which was hard to analysis. For the limitations of social isolation, there were less evidence that whether the content or usage had influence on this phenomenon. Whether there was any addiction of specific content on social media which causes social isolation and less social interactions was yet unknown. For the poor sleep quality perspective, these studies were lacking investigation of whether the usage of electronic devices would directly reduce sleep quality instead of social media abuse.

The current studies about social media abuse and depression were all focused on the macro-level researches. Since depression is a mental health disorder, for the future researches of this area, more studies related to neuroscience need to be discussed. Whether there are any neuroscience transformations during social media usage which contribute to depression is also very important. Besides micro-level improvements, while studying the relationship between social media abuse and depression in future researches, personal difference should also be taken into consideration. There should be more relevant surveys which are related to personalities alone with the following surveys. It is important to state that every individual is very different in terms of how they view and process social media content. The influence of social media abuse therefore varies from people to people. Adding personalities analysis within this research will make the result more convincing and accurate.

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