A META-ANALYSIS OF THE EFFECT OF SOCIAL MEDIA ON THE MENTAL HEALTH OF YOUNGER GENERATIONS FROM 2004-PRESENT DAY IN ENGLISH SPEAKING COUNTRIES

Olivia Bledsoe

Introduction

Mental health has not been historically considered a matter of health and wellness, even so far as people suffering from mental illness being called insane (Geller 2006). More recently, mental health as a topic of discussion and priority within the medical community has risen, and results finding severe issues involving the mental health of young adults and teenagers are continually released (Padín 2021). In similar regard to the study of mental health, social media has become an immensely popular and impactful part of modern life, specifically: it has changed the way of interacting, working, and living. Apps like Tik Tok, Instagram, and Snapchat are among the most popular social networking sites allowing users to participate in the raging new trends in different communities. On Tik Tok, one trend called "This is just how I cope" highlighted the ways that different content creators were healthily coping with their eating disorders and allowed them to promote some of the methods they utilized to manage their struggles (Herrick 2021). This trend was able to impact and help millions of viewers think about their own journey and adopt a few newer coping mechanisms. The followers and breadth of impact this Tik Tok made make it even more obvious that social media directly impacts the mental health of these millions of young adults. The purpose of this paper is to examine the toll that social media has taken on the mental health and quality of life of so many young people and due to the lack of gap in research, meta-analyze all the current research works available on this topic that meets the specified parameters. I was able to find a total of 9 peer-reviewed papers that explicitly investigate the natures of my topic which review data from 2004 until the present day and the young adults of English-speaking countries.

Literature Review

Establishing How Social Media Has Correlated to the Decline in Mental Health

Conversation on the topic of health and wellness has shifted tremendously in recent years with mental health growing towards being valued equally as important as physical health (Wade 2020). Mental health troubles typically lead to further health issues as it completely disrupts the way the person thinks and lives their life (Perrin 2010). E.M. Perrin, who is currently working at Johns Hopkins University as a research fellow in childhood obesity, published a study showcasing numbers of children upwards of 20,000 in grades 7-12 suffering from problems with their self-perception. Perrin's research has displayed a tendency in children to demonstrate a misconception of themselves and continue to struggle with self-acceptance throughout their lives; Perrin verified the connection between growing up overweight and developing a poor body image and the development of future health issues with eating disorders and other mental illnesses (2010). In one experiment demonstrated by Madeline R. Wick and Pamela K. Keel, for the International Journal of Eating Disorders, the scientists found that posting edited photos on social media has begun to have a negative effect on college students and their own self-perception; specifically targeting their mental health and in turn, the way they chose to manage their eating

habits. The correlation being discussed here maintains the theory that social media is endangering teenagers and causing mental harm (Wilksch 2020).

How Self-perception and Body Issues Correlate to Mental Health

Although social media has positive impacts on society like aiding communication and creating an entirely new realm of job opportunities, social media's negative impacts on society are not to be underestimated. The newer generations are more directly impacted by social media in a manner of their mental health. Social media users are more prone to suffer from issues with their self-perception which cause mental health declines due to, editing of pictures, and the unrealistic perspective that social media highlights and shows because of how harmful these things can be to the developing mind of a teenager (Wade 2020). Mihee Kim, of Sejong University, has conducted multiple studies particularly involving new media, body image, and media effects; she writes in one article regarding the effects of social media networking, addressing the idea that posting selfies on social media has begun to lead to further dissatisfaction with one's body. In order to prove this, Kim conducted a survey in South Korea to analyze how social media users are affected by the platform in a way that affects their body image. Her analysis concluded that posting on social media provides no psychological benefits and actually causes a need for attention and popularity. Similarly, in an article by Covadonga González-Nuevo, of the University of Oviedo, the authors address the clear relationship between social networking sites and the risk of developing an eating disorder. González-Nuevo surveyed the perceived effect of social media and the concerns women had about their appearance; she discerned that there is not only a direct correlation but found that the younger the social media user, the more increased risk they had for developing an Eating Disorder (ED). Both of these studies solely focus on the impact of social media posting on women. Studies like this were common during my review of literature, however, there was a clear lack of overall analysis and definite conclusion.

It would be ignorant to solely blame social media for the relatively recent increase in mental health disorders. Unfortunately, the development of these problems did not suddenly just occur once social media came around; eating disorders, anxiety, depression and other mental health issues were already growing at a rapid rate, however, with the aid of social media, they continue to grow even faster.

Gap

As I reviewed information on the topic in an effort to understand the background research already performed, I found that there was an extreme prevalence of under done research. I came across article after article that failed to yield conclusive results. I recognized that I had found my gap here; because although there had been tons of research "completed" regarding social media and mental health, most of these articles had been unable to really had something concrete to the conversation. The only way to contribute in an impactful manner would be to synthesize the work previously done but come out of it with a newer conclusion. By completing a meta-analysis with these requirements, I was able to clarify what research is exact, final, and clear regarding the impact on mental health due to social media on current operational generations and add that to the current conversation as a full analysis.

Method (Meta-Analysis)

What is a Meta-Analysis?

A meta-analysis is a systematic review of a selected set of studies that fall into a certain category of a topic that submit to certain requirements (Himmelfarb Health Sciences Library, *Meta-Analysis*). By utilizing this methodology, researchers are given the ability to provide one set group of research that maximizes the understanding of the topic due to the number of articles agreeing with the topic at hand. The meta-analysis is purposefully designed to examine more than one piece of research and group similar, credible sets and maximize their strengths as one united research piece.

Assessments and Measures

With this meta-analysis method, I am going to measure, collect, and analyze the articles and information I find that fall into the specific requirements I have elected to help me cut away research that is not specific enough. After doing so, I am going to help define the quantifiable effect that social media is having on the mental health of its users by meta-analyzing a group of articles that fit the same parameters. The requirements for the articles are as follows: English speaking, 30 year olds and younger, and published between the years of 2004 until the present day. Each of these is required in order to better cut down the amount of articles fitting into my research topic as well as to have the most specific and clear cutting analysis. The connections between the articles will be statistically analyzed in order to find the presence of a correlational relationship between mental health and social media.

Selecting the Parameters

I struggled initially with finding enough articles that fit each of the select parameters I had. After many adjustments, I was still facing many problems finding enough. I struggled heavily with finding articles and gaining access to so many possible inclusions. But by adjusting my project to English speaking I was able to include extremely relevant research conducted in countries like Canada, Australia and England and not have to cut them considering their researchers have conducted and published many viable and useful articles and evaluations. Due to the relatively recent growth of social media, any research on adults over 30 would have compromised the results due to the irrelevance of social media in their adolescent life. The final decision to limit article publication dates to within the timeframe of 2004 until present day was made due to a lack of consistent and overwhelming technology use in society until around 2004, a few years after the introduction of the iPod and the beginning of social media production. These specific parameters allow for an inclusive but specific research conclusion that identifies results that aren't affected by irrelevant variables.

Justifying the Choice to Complete a Meta-Analysis

After analyzing and researching different methodologies for my research topic, it became apparent that this methodology was the only conceivable option because working with the numbers and actually producing my own experiment was not feasible considering the time requirements for this work. After recognizing that an analysis of sorts would work best within this topic, I had to look at what methodologies fit into that and then which would specifically garner the best work and contribute the strongest additions to the conversation. The meta-analysis was best for this topic because there is already a broad amount of research available, however, so many articles were only half-baked, meaning, they did not prove powerful enough on their own to make a

dense enough argument in this conversation. There was not a different way of doing primary research available, so to add to this conversation, the best way was to add to the conversation was to analyze the research already in it and instead develop a larger argument that makes a real impact on the conversation.

Results

The Process Behind Finding Articles

Initially, for this meta-analysis, I had planned to stick by the EBSCO database and consistently use it for all research conductions. However, after reading all of the available articles on EBSCO on my topic, I gathered that I was limiting my project by only using one database as I had come up with only 2 total articles following many thorough analyses and cutting from the initial 5. I proceeded to use JSTOR, PubMed, and Google Scholar as additional databases to come up with a total of 4 articles. However, from these articles, I conducted extensive investigations of their works cited and found a total of 9 articles from this specific analysis. After playing around with the keyword phrases, I finally decided that I had to change around my wording conditionally to the database. For instance, while utilizing PubMed, I inputted "psychiatric disorders in youths related to social media;" but for EBSCO, JSTOR and Google Scholar I used "'united states' and 'mental health' and 'social media'" as keywords to receive accurate and somewhat relevant results. The process was not completed here, thousands of results were coming up with these inputtations and many of them were still not quite what I was looking for. I began by removing duplicates and analyzing titles before reviewing the abstracts of papers that had made it through so far. I got down to a significantly smaller group of studies by then and was able to begin annotating and analyzing each of the studies before deciding whether or not to include them in the final group for analysis.
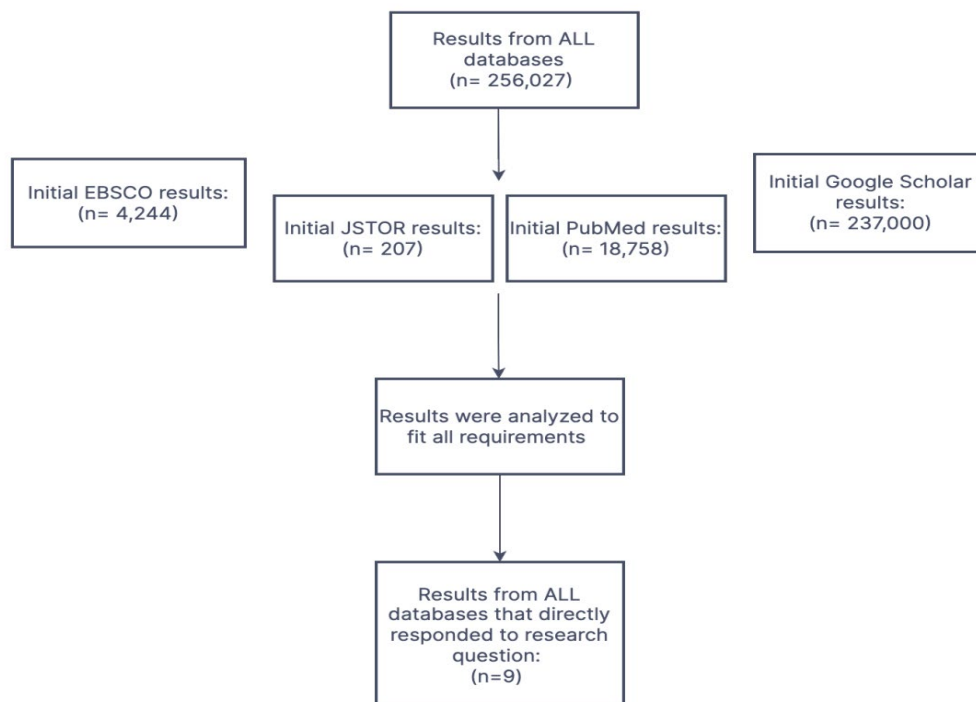

Figure 1. Flow Diagram Describing How the 9 Articles Were Selected.

Author - "Title"	Mental health concern addressed:	Topic/Research question:	Method:	n=	Results:
Neira Corey J. Blomfield Barber, Bonnie L. - "**Social networking site use: Linked to adolescents' social self-concept, self-esteem, and depressed mood.**"	Self-esteem and mood	Highlight the complexity of the relationship between adolescent SNS use and indicators of adjustment, and offers insight into the diverse types of adolescent use of SNSs	"The present study employed a multi-dimensional measure of SNS use to investigate the link between Australian adolescent SNS use and indicators of adjustment."	n= 1819	The results showed that frequency of social networking sites (SNS) use was linked to higher social self-conception while investment in SNSs was associated with lower self-esteem and higher depressed mood. *Not related to gender*
Stoney Brooks, Phil Longstreet - "**Social networking's peril: Cognitive absorption, social networking usage, and depression**"	Depression	A survey of 251 social networking users reveals that temporal dissociation and heightened enjoyment are associated with increased usage, and usage was found to be associated with greater levels of depression.	They used the MDI (Major Depression Inventory) method.	n = 268	$R^2 = .06$ A statistically significant relationship between depression levels and SNS use was found in this study.

Eline Frison, Steven Eggermont - "**Exploring the Relationships Between Different Types of Facebook Use, Perceived Online Social Support, and Adolescents' Depressed Mood**"	Depressed mood	This study aims to provide a deeper understanding of the relationships between different types of Facebook use, perceived online social support, and boys' and girls' depressed mood.	The structural equation AMOS using the maximum likelihood method was utilized. "The w2 to degrees-of-freedom ratio (w2/df), the root mean square error of approximation (RMSEA), the adjusted goodness-of-fit index (AGFI), and the comparative fit index (CFI) were used to address the fit of the models"	n= 910	The final model, presented in Figure 2, showed a good fit of the data and yielded a w2 value of 448.02 with 157 degrees of freedom, p < .001, RMSEA 1⁄4 .05, AGFI 1⁄4 .93, CFI 1⁄4 .96, w2 /df 1⁄4 2.854. This study found a statistically significant relationship between depression and Facebook use. They also found gender variables played an important role in this effect.
Julie Katia Morin-Major, Marie-France Marin, Nadia Durand, Nathalie Wan, Robert-Paul Juster, Sonia J.Lupienbcd - **"Facebook behaviors associated with diurnal cortisol in adolescents: Is befriending stressful?"**	Stress	Stress levels and their correlation with Facebook use were monitored in this study in a diverse group of adolescents in age and gender.	A hierarchical regression	n= 88	No association between FB use frequency and depressive symptoms in adolescents. Their results replicated the influx of cortisol levels when compared to FB friends, self-representation, and network size.

Jacqueline Nesi Mitchell J Prinstein - **"Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive Symptoms"**	Depressive symptoms	This work studied the comparison between frequent social media use and depression-like symptoms in students over the time span of a year.	The Short Mood and Feelings Questionnaire was used. "Pearson correlations were used to examine bivariate associations."	n= 619	"Interestingly, although depressive symptoms were positively correlated with concurrent technology use frequency, this association was no longer significant after accounting for other variables in the full regression model, as discussed below." Gender did have an effect on the associated results between FB use and depressive symptoms.
Ajit Shah - **"The relationship between general population suicide rates and the Internet: a cross-national study"**	Suicidality	Population of suicide rates and internet users	Cross-national study by regression analysis	* [1]	On multiple regression analysis the prevalence of Internet users was associated with general population suicide rates in males, and this independent relationship in females approached statistical significance.
Hajime Sueki - **"The Effect of Suicide-Related Internet Use on Users' Mental Health"**	Suicidality and depression/anxiety	How using the internet in a suicide focused research manner affected the mental health of the user	"Analysis using both cross-lagged effects and synchronous effects models was performed for all 12 combinations"	n= 850	Suicidal ideation, depression/anxiety, and loneliness all increased with more SNS use.

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[1] Researcher attempted to reach out to the author for information regarding the n-value in place, however, the author has since been deceased after the publication of this article.

| Friederike Trefflich, Sophie Kalckreuth, Roland Mergl, Christine Rummel-Kluge - "**Psychiatric patients' internet use corresponds to the internet use of the general public**" | How social media affects the mental cognitivity of mentally ill patients | Compare internet use to psychiatric disorders. | Three hundred and thirty-seven patients participated in the study and completed a 29-item questionnaire. A response rate of 66% was achieved. | n= 337 | 79.5% of participating patients with a psychiatric disorder were Internet users. There was a positive statistical value found connecting mentally ill patients and their level of internet use. |
| Erin A.Vogel, Jason P. Rose, Bradley M. Okdie, Katheryn Eckles, Brittany Franz - "**Who compares and despairs? The effect of social comparison orientation on social media use and its outcomes**" | Depression | This study focuses on the direct effect that social media (Facebook) comparison has on the human psyche. | Hierarchical regression analyses were used for the statistical analysis. | n= 120 | There was a positive correlation between Facebook use and depression. |

Analysis

Facebook's Role

3 articles of the 9 tested recognized Facebook as the main social media networking site responsible for attracting the attention of social media users and analyzed Facebook's effect on its users specifically. Facebook proved to be effective in terms of damaging its users mental health in only 2 of the articles and the other found Facebook to have no direct connection to depression levels. Firstly, should Facebook continue to be a social networking site with the worst impact on its users, the application leaders have the opportunity to make adjustments and learn more about why their site is so damaging in order to change the damage it's causing. As a global operation, Facebook is responsible and influential on millions of people if not billions, with an impact that large, they face a responsibility to take care of their users and protect them when possible.

Prevalence of Depression

Depression as a mental health effect was studied in 5 of 9 articles explicitly for its compliance with extended use of social networking sites (SNS's). In all 5 of these studies, they discussed the possibility of a direct connection between depression and SNS use. However, 4 out of 5 found a clear, significant, statistical relationship connecting depression as a relevant result of social media use. Should depression be the main mental illness brought on by social media use, an opportunity for scientific exploration as to why that is, opens up. Tons of research gaps regarding depression as a mental illness still exist and information regarding how it comes to be from social media use could possibly help make larger connections as to its origins at all.

The Impact of Gender

Of the 9 articles analyzed, 3 of the articles were able to find correlating values representing the presence of a relationship between gender roles and their social media use to mental health declines. This information is important because 2 of the other articles explicitly stated that they found no importance of gender. This 2 to 3 relationship of the 5 that mention gender as a variable is indicative that gender does play a role to some degree. This provides an area of further exploration and a possible lead to a scientific explanation for why so many young people are experiencing mental health declines due to social media. If gender is playing a role in the mental health implications a user faces, a gap for scientific focus becomes available. Gender has historically played an important part in stereotype, athletic ability, understood intelligence, and even rights, but if gender really does affect the way a user is impacted by social media, researchers have opportunities to find out more about why gender influences this part of the brain and what else it might be affecting.

Conclusion

The results displayed throughout this meta-analysis reflect a solid presence of relation between social media use and declining mental health and appropriately monitored the significance of overlapping variables. The background and review of literature thoroughly described the current stance in which researchers stand with access to information regarding the mental health-social media topic. The methods section continued to clarify the lack of gap in research and the purpose in which this paper aimed to serve by conducting a meta-analysis rather than primary research. Following the actual research method being carried out, the analysis explicated the many connections and correlations within the established conversation. This section of course experienced limitations to the heaviest extent compared to the rest of my paper.

Further Studies

Of the 3 connections analyzed in the study, the one regarding the importance of gender roles on the impact social media has on young adult mental health is one that was clearly very underdeveloped in the field of information. The results show that this area has a lot of potential and could prove to be extremely influential in research regarding social media positives and negatives. Finding out more information regarding the importance the gender plays regarding mental health effects from social media would be extremely influential in the process of educating new generations on the pressure of social media. Primary studies specifically reviewing the different impacts of social media on male and female young adults has the potential to predict future implications of this technology as well as kickstart conversation regarding potential solutions to the mental health declines.

Real World Application

This study would be very applicable to arguments regarding the methods of education being utilized and how educators in schools can help students acknowledge the harmful effects of overusing social media. Following the results of this meta-analysis, it seems fair to assume that by presenting basic information to students introducing results like these, where social media proves harmful to mental health, they would be more willing to monitor their own social media use. As a result of taking this straightforward approach and going directly to schools, we as a society have the ability to potentially stop or at least slow down the rate at which teenagers and young adults are being affected negatively by social media. It is important that we use results like the ones shown in this study where the explicit relationship between social media and declines in mental health are statistically replicated as evidence in the fight to stop this from further harming younger generations. If students and young adults were able to see clear information and evidence like this, they would be more hesitant and concerned about their own social media use. Until it is publicly explained that there is statistically significant evidence proving social media harms mental health, they have no reason or drive to change their habits when it comes to using social media in particularly harmful ways.

Limitations

The scope of this research was somewhat limited because I had to be aware of the limited time-frame I had and the fact that when conducting a meta-analysis as only 1 researcher, it is very easy to become overwhelmed with studies to review. By narrowing my scope to such specific terms, I made this research feasible for my personal limitations. Furthermore, my results were affected by my inability to perform a deeper statistical analysis farther than a simple ratio due to the lack of statistical background I have.

Acknowledgments

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