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Exploring the Differential Susceptibility to Media Effects Model (DSMM) in the Context of Youth Mental Health During the COVID-19 Pandemic: A Meta-Analytic Review

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ABSTRACT

This meta-analysis explores the relationship between social media use and youth mental health specifically anxiety, depression, and secondary traumatic stress (STS) during the COVID-19 pandemic, through the lens of the Differential Susceptibility to Media Effects Model (DSMM). DSMM proposes that media effects vary based on individual traits, developmental stage, and social context. A systematic review of quantitative studies published between 2013 and 2025 was conducted across major databases. Included studies focused on youth and reported empirical data on social media use and mental health outcomes. The findings revealed association between higher social media exposure and increased psychological distress. These results conceptually support DSMM, highlighting the importance of individual and contextual factors in shaping media effects. This study emphasizes the value of theory-driven approaches in understanding digital media's psychological impact and offers insights for youth mental health support and digital literacy interventions.

Keywords: Differential Susceptibility to Media Effects Model (DSMM), Social Media Use, Youth Mental Health, Anxiety, Depression, Secondary Traumatic Stress (STS), COVID-19 Pandemic, Media Psychology, Adolescents and Young Adults, Digital Media Exposure, Meta-Analysis

Introduction

The COVID-19 pandemic was more than just a public health crisis it reshaped nearly every aspect of daily life, particularly for young people. With schools and universities closed, social routines disrupted, and physical distancing measures in place, millions of adolescents and young adults turned to digital platforms, especially social media, to fill the void. These platforms became not only tools for staying informed, but also vital spaces for maintaining social connections, sharing emotions, seeking distraction, and trying to make sense of an uncertain world. While social media served as a coping resource for many, its role in young people's mental health during the pandemic is far from straightforward.

As educational institutions closed, social interactions were limited, and physical movement restricted, many young people turned to digital spaces especially social media as their primary outlet for communication, connection, and emotional expression (Ellis, Dumas, & Forbes, 2020). Youth used it to keep in touch with friends, attend virtual classes, follow pandemic updates, share personal experiences, and engage in social and political discourse. Platforms such as Instagram, TikTok, Facebook, Twitter, and WhatsApp became essential for maintaining peer relationships, accessing information, and managing stress during lockdowns (Pfefferbaum & North, 2020).

While this helped many feel less alone, it also meant that young users were constantly exposed to emotionally charged and often

distressing content: news of rising death tolls, misinformation about the virus, personal stories of loss, economic fears, and polarizing debates. The emotional intensity of this content, combined with extended screen time and social isolation, raised urgent concerns about the psychological well-being of young people. While these platforms offered moments of relief and social support, they also became sources of constant exposure to distressing news, misinformation, and emotionally charged content (Gao et al., 2020), raising concerns about their potential role in deteriorating mental health.

Social media, on one side, provided emotional support: it diminished feelings of loneliness, facilitated self-expression, and fostered communities of common experiences. Conversely, these platforms also subjected young users to an unending flow of troubling news, sensational content, and emotionally intense conversations regarding illness, loss, political unrest, and financial struggle. Consequently, numerous young individuals encountered a combination of anxiety-provoking and trauma-evoking material, occasionally without comprehending the extent of its impact on them. The distinctions between information, misinformation, and emotional overwhelm frequently became unclear and this resulted in tangible psychological effects

Studies carried out during the pandemic have consistently indicated a rise in mental health problems among young people, featuring elevated levels of anxiety, depression, and indicators of secondary traumatic stress (STS). However, not all youths experienced the same level of impact. Certain individuals indicated increased distress associated with their media consumption, whereas others displayed considerable resilience prompting an essential inquiry: Why do some young people seem more vulnerable to the mental health impacts of social media than others?

The Differential Susceptibility to Media Effects Model offers a useful way to unpack these mixed results. Designed by Valkenburg and Peter in 2013, the model steers researchers away from a simple cause-and-effect lens and toward a more nuanced view. Rather than assume that every teenager on Instagram feels the same, the framework argues that media impacts vary based on three overlapping layers: personal traits (such as emotional sensitivity or past trauma), stage of development (age, cognitive maturity, and so on), and immediate social context (supportive family, critical friends, and the rest). During a global crisis like COVID-19 where media became both a lifeline and a stressor these dynamics became even more relevant.

Interest in how social media affects young people's minds keeps rising, yet the evidence remains uneven. A number of investigations tie heavy online activity during the pandemic to clear mental health declines, while others argue those harms are mild or depend heavily on personal and situational factors. Variations in survey questions, research methods, national cultures,

and even what counts as media use likely explain much of the scatter. Moreover, even though several papers note that some youths are more vulnerable, very few use a guiding model such as DSMM to sort and interpret those observations. That shortcoming has the dual effect of making current reviews messy and inviting fresh, theory guided work that pulls the pieces together.

This gap in the literature shows that we need a more thoughtful and theory-guided approach to understanding how social media use has affected the mental health of young people during the pandemic. To help address this, the current study brings together findings from existing quantitative research by conducting a meta-analysis focused on the relationship between social media exposure and mental health outcomes specifically anxiety, depression, and secondary traumatic stress (STS) in youth during COVID-19.

What makes this study different is that it uses the Differential Susceptibility to Media Effects Model (DSMM), which lets the authors drill down into the reasons social media hits some teens harder than others. By adopting the framework, researcher examine how personal traits like emotional sensitivity, for example-social surroundings such as family or friends, and different use habits passive scrolling versus active liking or chatting-combine to steer a young person's reaction to online posts.

Statistically combining data from many separate studies in a meta-analysis gives a more reliable estimate of how strong association really are and why impacts vary across youth samples. the goal isn't just to understand the problem better from an academic point of view, it is to fuel good work in media literacy, youth mental health programmes, and public-health plans that have to gear up quickly when new online public health risks challenges.

Rationale of the Study

Most research on social media and youth mental health still relies on older media theories like cultivation theory or uses and gratifications, which tend to treat users as if media affects everyone in the same way. But in reality, young people react to media very differently depending on who they are, how old they are, and what kind of environment they're in. That's where the Differential Susceptibility to Media Effects Model (DSMM) comes in. It's a newer, more flexible theory that looks at how personal traits, developmental stages, and social surroundings shape the way media affects someone emotionally and mentally.

Even though DSMM offers a much more realistic view of media influence, it hasn't been widely applied to studies on social media especially not during something as intense and disruptive as the COVID-19 pandemic, when screen time skyrocketed and mental health challenges deepened. This study aims to explore that gap by using DSMM to better understand how social media use during the pandemic has been linked to mental health issues like anxiety, depression, and secondary traumatic stress (STS) particularly in

young people.

Objective of the Study

The primary objective of this meta-analysis is to systematically examine the relationship between social media exposure and negative mental health outcomes among youth aged 15 to 24 during the COVID-19 pandemic. This study aims to quantify the overall strength of these associations across existing quantitative studies and to identify patterns of psychological vulnerability within this population.

Guided by the Differential Susceptibility to Media Effects Model (DSMM), this meta-analysis further seeks to conceptually explore how dispositional (e.g., personality traits, emotional regulation), developmental (e.g., age, cognitive maturity), and social-contextual (e.g., family environment, peer influence) factors may shape or moderate the impact of social media use on mental well-being. By applying a theory-driven lens to synthesize current evidence, the study aims to clarify why media exposure affects some youth more negatively than others, and to highlight the importance of considering individual and contextual variability in both research and intervention design.

Ultimately, this research aspires to advance the theoretical application of DSMM in the digital age, contribute to a more nuanced understanding of youth media effects during crises, and inform future efforts in mental health prevention, digital literacy, and youth support strategies during times of societal disruption.

Research Question

The Differential Susceptibility to Media Effects Model (DSMM) posits that media effects are not uniform but depend on individual differences. In DSMM terms, three types of variables modulate media impacts: dispositional (e.g., personality traits, self-esteem), developmental (e.g., age, maturation), and social-contextual (e.g., family or peer environment) factors. Adolescence is highlighted as a sensitive period (heightened emotional/cognitive reactivity) during which these factors can make some youth more vulnerable to media.

RQ 1: To what extent does the Differential Susceptibility to Media Effects Model (DSMM) provide a comprehensive framework for understanding how individual differences influence the relationship between social media use and negative mental health outcomes among youth during the COVID-19 pandemic?"

Methodology

This meta-analysis focused on examining the relationship between social media use and mental health outcomes specifically anxiety, depression, and secondary traumatic stress (STS) among youth, through the lens of the Differential Susceptibility to Media Effects Model (DSMM). To ensure both theoretical relevance and recency, the study included peer-reviewed empirical research published between 2013 and 2025, starting from the year DSMM was introduced by Valkenburg and Peter (2013) up to the present. This

period captures both the theoretical development of DSMM and the heightened relevance of social media during the COVID-19 pandemic (2020-2022).

To enhance coverage, reference lists of selected articles were manually screened to identify additional eligible studies. The search process was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards to ensure transparency and replicability. Only studies published in English and containing quantitative data relevant to the research questions were considered for inclusion.

Theoretical Framework

Introduction to Differential Susceptibility to Media Effects Model (DSMM) Theory

The Differential Susceptibility to Media Effects Model (DSMM) is a powerful theoretical framework that explains why and how media content affects individuals differently, particularly in terms of their cognitive, emotional, and behavioral responses. Developed by Valkenburg and Peter in 2013, the model has gained significant popularity for its comprehensive approach to media effects, as it takes into account individual differences (such as age, personality, and mood) and contextual factors (like social and cultural environment). Given that it is challenging to fully capture the complexity of youth's social media behavior, the DSMM is especially valuable when examining how social media use impacts the mental health of young people during crisis periods, such as the COVID-19 pandemic.

Origin and History of DSMM

Credited to Valkenburg and Peter (2013), the DSMM was developed as a composite of what was seen as various theoretical frameworks on Media Effects in an effort to cater for the growing multifaceted of Media use in the emerging digital age. Like Cultivation Theory, Uses and Gratifications Theory, Social Cognitive Theory, DSMM has adopted the view that effects that are determined in media are not general, but rather press based on sensitization and contexts. Valkenburg and Peter (2013) came up with this theory to help understand the varying effects of media to individuals basing on content, media usage and vulnerability factors.

In the past, researchers investigating media effects paid much attention to the main or direct effects of media with little regard to how these effects may be conditioned by individual and contextual factors. Earlier models, for example the Limited Effects Model proposed by Klapper (1960), acknowledged the part played by differences, but did not provide a detailed conceptualization of these differences with reference to today's media environment, new media including social media, interactive media, and user generated content platforms. DSMM was, therefore, a more suitable model to fill the gap and accommodate developmental, dispositional and social susceptibilities.

Social Value of DSMM

The social relevance of DSMM is the specification of how media can have positive impact on socially and psychologically well-being or negative outcomes, which includes anxiety, depression and low self-esteem. DSMM's value is salient in today's digitized media culture that is governed by internet technology, especially in the interaction of youths through social media accounts. Given the fact that young people spend most of their time on the internet the social utility of DSMM can be used to understand the risks and benefits that come with social media.

For example, the investigations of Fardouly et al., (2021) employed DSMM to investigate the role of the available social media content for body dissatisfaction and social comparison of adolescents. This work therefore supports the need to adopt DSMM in the understanding of how some media content (preferably beauty propaganda) could pose negative impact on vulnerable persons, perhaps without affecting others. Therefore, DSMM has a relatively high level of social usefulness because it can be used for the identification of the population at risk and extrapolation of potential media-based harm.

Social Importance of DSMM

Thus, the social relevance of DSMM is in its potential to provide relevant information to the choice of policy, educational intervention, and parents' management measures. DSMM has gone beyond being an academic tool that can be used particularly in media analysis and has found its uses in media literacy programs, use in media reduction interventions which seeks to minimize psychological impact of media.

One of the recent examples is the study by Elhai et al., (2017) who employed the DSMM approach to investigate the psychometric properties of the used social media for mental health outcomes in the context of COVID-19 pandemic; thus, underlining the importance of the subject area in the modern world. By extending that, the authors also learned that DSMM can serve as the reliable theoretical model to examine how personal characteristics, including baseline levels of anxiety or depression, affect one's susceptibility to adverse effects of social media use, including stress produced by COVID-related news consumption. Such studies show how the knowledge gained when using DSMM can help in the formulation of strategies that would reduce the effects of social media on mental health among vulnerable groups of people such as the youths.

Furthermore, the DSMM is becoming more involved in policy discourses concerning the possibilities of legislation of media content. In this regard, the theory explains how and why some media content influences more deeply some people compared to others, which offers the rationale for interventions, such as the increase of restrictive measures of negative content for vulnerable age groups or people with mental disorders (Verduyn et al., 2017).

Development of DSMM Theory

The DSMM has also evolved and been fine-tuned since it was initially introduced in the course of a company's development. Starting from television and movies the theory extended to digital and social media platforms. Another extension of the DSMM framework was conducted by Nesi et al., (2020) who pointed that media environments in social networks differ from television, for example, as they are embedded in user's interactions, which differentiate the impact of different types of media on youth mental health.

The theory has also grown up to the present day with more elaborate concept of developmental vulnerabilities, whereby the same media content affects children, adolescents and adults in their unique ways because of their different levels of cognitive and emotional development. For example, Eijnden et al., (2018) have built the extension of DSMM by emphasizing the differences in media susceptibility depending on life cycle. They found out that adolescents are sensitive to peers and social comparison in social media while children aged 0 to 8 years are sensitive to the content of what they watch or encounter such as violence or wrong actions.

Further, as has already been mentioned, DSMM has evolved to reflect the fact that contemporary media consumption is far more fragmented than even just a decade ago. Algorithms that suggest content for users of such services as Instagram, TikTok or YouTube depend on the users' activity, thus making the media environment extremely personalized. Therefore, the potential biases have been introduced to the updated set of DSMM criteria concerning not only general susceptibilities but algorithm-induced content personalization's potential to exacerbate media effects for some people depending on their consumption patterns (Valkenburg et al., 2021).

Current State of DSMM

Presently, the DSMM is one of the most recognized and popular models that are used in media effects research, particularly in the areas concentrating on the role of social media in youngsters' lives. It has been used in mental health, social behavior, and learning achievement. The four propositions that encompass dispositional, developmental, and social susceptibilities as well as the use of media and the effects of media have remained pertinent to the pattern of individual distinctive differences in media (Valkenburg et al., 2021).

New directions in studies have been aimed at the further development of DSMM to the new media kinds including virtual and augmented reality. Valkenburg (2018) looked at the possibility of effects of social media by exploring if extended reality effects the susceptibility of the users to media effects in ways that social media does. Thus, DSMM still has its relevance in the analysis of media usage across the characteristics of the individuals as media evolves day by day.

Overview of DSMM in Different Areas

The DSMM model has been used in different areas to explain media effects due to people's differences. First as a media centric model, the DSMM has evolved into research domains such as social media, mental health, education, and digital marketing. This section will give an overview of the areas that have applicability of DSMM, and as such outline some of the areas that have confirmed use of DSMM and other areas that require more research.

A. Media Effects on Mental Health

The DSMM has also been extensively used in studies analyzing the effects of media especially social media on mental health. Some of the building blocks as Valkenburg & Peter (2013) for these effects are 'individual susceptibilities', the dispositional, developmental, as well as the social, indicating who among the receivers of media messages is more susceptible to negative media influence than others. This model has helped in explaining how all the social media platforms are helpful in worsening cases of anxiety, depression, and low self-esteem.

However, as Valkenburg state in their work which lays within the scope of DSMM, it is critical because it works well in describing why social media can be detrimental to mental health, but there is still a lack of understanding of how it could be useful for the health of one's mind. While acknowledging the positive impact that such mental health maladies are prevented by social media by social support and community that is created by DSMM, more intensive research is needed specifically on the comparison of positive and negative impact of social media interaction in preventing the diseases such as by advocating for engagements in supportive online communities.

B. Child and Youth Development

In the context of child and adolescent development the DSMM has been very influential though in explaining how young people are especially vulnerable to media effects. Research by Beyens et al., (2020) reveals that adolescents are most vulnerable to the negative aspect of social media use such as cyberbullying and social comparison because of developmental susceptibility including identity, peers, and emotions. Such distinction of when and how the identified types of media influences may be more potent in any developmental phase is well framed in the understanding offered by DSMM.

Although DSMM has been widely used in this area, some aspects regarding young audiences in new media environment are not well investigated. For example, today's youth commonly engage in media that use technologies such as virtual reality and augmented reality. It make a point in stating that the interactive and engaging characteristics of these technologies may well exacerbate vulnerabilities in ways that traditional or social would not. However, there are many questions that remain unprobed when it comes to using DSMM in VR and AR especially on the

impact that these mediated realities have on developmental factor such as attention, empathy or cognition.

C. Digital Learning and Education

In the field of education, DSMM has been used to determine the learners' reactions towards digital learning environments. Anderson, Steen and Stavropoulos (2017) have also supported the fact that through the use of DSMM, one can be able to explain why some students perform well with educational technology while others do not. Engagement factors including attention span, motivation, and cognitive developmental levels are very influential why or how students interact with content in the digital form.

However, as has been articulated in this area, more refined research is needed in order to establish the circumstances in which educational media is likely to enhance or inhibit learning. For instance, the student who uses an educative software with personalization features may be helped by the algorithms during his/her learning but may be hurt by the same algorithms if the designers did not consider how different human brains are. More research is required to extend the use of DSMM in AI and machine learning is integrated more into various learning technology platforms.

D. Policy Development and Media Literacy

It has been the DSMM's exposure to media literacy programs and formulation of related policies that has evidenced the efficacy of paradigms. Since theory defines particular susceptibility factors, the theory can be used as foundational for constructing the solutions for minimizing adverse influences of media consumption. Livingstone and Helsper (2020) drawing on the DSMM have called for media literacy, which gives young people an approach of how to handle content that is negative and degrading such as cyber bullying or fake news.

And yet, DSMM is not applied in policy-making as common yet. Although, some of the components of the theory have been adopted during the development of media literacies, there is a gap in the formulation of broad policies that seek to address the effects of harmful media content based on susceptibility. This is especially true if one is to consider the contributions of such social networks which only promote negative content given their algorithms. The future research could use the DSMM to come up with better policies that will safeguard vulnerable people from the impacts of personalized content algorithms.

DSMM and Its Relation to Mental Health

Hence, the Differential Susceptibility to Media Effects Model (DSMM) has been deemed influential since it helps explain how precisely mental health may be influenced differently by media. The media effect model suggests that the impacts are not equal because different people have different levels of vulnerability to change, some media environments are more susceptible to the changes, and there is difference between types of medias. Some of these

susceptibilities are dispositional, which include personality characteristic, mental illness, developmental characteristics such as age and cognitive development, and finally social characteristics that include, peer pressure and family influences. Since the increase of the use of SNS, DSMM has become relevant to mental health research as it provides understanding why certain users are more susceptible to mental ill-health experiences including anxiety, depression and stress.

As will be described later, the DSMM is inherently developed to assess the mental health consequences since it affirms that effects occur in the setting of personal traits and the contexts people interact with. In particular, this theory is employed to predict how media can both, reinforce and reduce mental health disorders with regards to vulnerability. For example, media content that is of social comparison type may be innocuous and or an inspiration to the other audience but may cause low self-esteem and or depression on those who are vulnerable due to aspects such as body image (Valkenburg, 2017).

Research by Fardouly and Vartanian (2016) have used the DSMM framework in determining the effects of the exposure of idealized images of the human body on social media in causing body dissatisfaction, which is a serious mental health concern for the youths. Their research also demonstrates that people who are vulnerable or those with a dispositional susceptibility including body image sensitivity or low self-esteem will suffer negative impacts on their mental health due to using social media. The basis for the knowledge of why certain individuals are more vulnerable to developing mental health issues; while others are less susceptible to such conditions is easily intelligible from the lens of the DSMM owing to its consideration of differences between individuals.

Several empirical research works have applied the DSMM in exploring the harm or the otherwise effects of social media and other media on psychological well-being. As one of recent studies, Valkenburg and Peters (2016) investigated the dependent variable of adolescents' self-concept and emotional condition by independent variable of media exposure. In the works of the given researchers, adolescents with low self-esteem turned out to be more vulnerable to negative media effects and material that strengthened negative slender subjects' image. They also determined that the media has direct effects together with indirect effects by personality and social factors making adolescents' emotional well-being vulnerable.

In another study by Beyens, Frison and Eggermont (2016) examined the role of SM use and depressive symptoms among adolescents using the conceptual framework of the DSMM. Based on their study they discover aspects that indicate that social media usage exacerbates depressive symptoms in adolescents given to certain vulnerability factors such as low emotional stability or high

neuroticism. The study also underlines that even though media use is not toxic in and of itself it can worsen mental health conditions in those with relevant risk factors.

A. Dispositional Susceptibilities and Mental Health

Of particular, it is noteworthy that one of the most important elements of the DSMM system is dispositional susceptibilities, which relate to an individual's personality, pre-existing psychiatric disorders or condition, and emotional state. The qualitative research of Appel, Marker and Gnambs (2019) employed on the DSMM framework to establish causality between social media usage and anxiety. The authors discovered that, those who had high dispositional anxiety were more vulnerable to stress and anxiety resulting from social media use particularly while "passively" consuming content, such as browsing through feeds without having to engage. This supports the notion that not all the media usage has poor mental health consequences only those with proneness to anxiety were considered.

In the same way, Blomfield et al., (2014) also employed DSMM to analyze the correlation between SM engagement and depressive symptoms in teenagers. The studies conducted by the researchers revealed that, young people with low self-esteem and high level of depressive symptoms are the prime targets of social media risks. This paper also focuses on how the dispositional characteristics particularly the mental health susceptibilities determine the effects of social media on mental health.

B. Developmental Susceptibilities and Mental Health

The other element is the individual susceptibilities including the age, cognitive development among others which comprise the basic aspect of DSMM. When it comes to age, it is discovered that youths especially adolescents are most vulnerable to negative media effects because of their steady psychological and emotional development. DSMM examined the moderating effect of age on the relationship between social media use and depressive symptoms in adolescents and young adults. It was thus established that adolescents were vulnerable to depressive symptoms because of social media use as they are in their developmental stage where feedback from peers as well as perception of the self in relation to others is most sensitive.

Other research including the one by Nesi and Prinstein (2015) have also sought to explain how contextual factors influences the link between status updating and psychological wellbeing. About the impact of social comparison on social networking sites they discovered that youths whose social identity is not fully formed will suffer negative consequences. This is in congruity with the proposition made by DSMM that developmental vulnerabilities including identity development during adolescence preponderantly determine how media influences a person's psychological well-being.

C. Social Susceptibilities and Mental Health

One more concept, which has been integrated into the framework of DSMM, is the context in which people consume media. Research indicates that media use's social influence, parental interference, and support may either reduce or enhance the harm done on mental health. For instance, Frison et al., (2016) employed the DSMM to investigate the mediated effect of social support received from friends and family members on the relationship between SSM use and psychological wellbeing among adolescents. According to the study, the young people who reported higher social support were less likely to suffer adverse effects on mental health by the use of social media even if they come across with negative contents. This means that media susceptibility can be off-set by social sensitivities with the implication that social susceptibilities can act as a shield against negative media impact.

DSMM and Social Media

The Differential Susceptibility to Media Effects Model is even more appropriate for explaining how social media affects the people since the model particularly takes the difference in people into consideration in relation to the impacts of media. Since the use of social media platforms has permeated in current society and especially in young people, analyzing the effect of content of social media on behavior, affect, and cognition, the DSMM's concentration on dispositional, developmental, and social vulnerability factors provides a unique perspective towards this problem. These factors make it easier to understand why some users are likely to be harmed or benefited socially through social media depending on their personality traits, developmental phases and social environments (Valkenburg & Peter-2013).

Marketing through a social media platform is unlike a traditional media since it involves the customers, allows two-way communication and is an ongoing process. The strength of the DSMM framework is that you can apply it to find out how these essential characteristics of social networks, like interactivity, personalization algorithm or passive and active content consumption impact users in a negative way. In the words of Valkenburg et al. (2021), as using DSMM, the researchers themselves can investigate how individual pre disposition factors explain the effects of these social media: Facebook, Instagram, TikTok, or Twitter.

Specifically, Liu, Bao, and Huang's (2020) study utilized the DSMM to examine the impact of social media usage during COVID-19. Researchers learned that people who had high levels of dispositional anxiety could deteriorate their mental health, including increased levels of anxiety and depression, if exposed to pandemic-related news on social media for long hours. In this paper, it is overall consistent with the DSMM framework as it considers how the varying person's vulnerability defines the media effects experience and its severity.

A. Dispositional Susceptibility and Social Media

These susceptibility factors include personality characteristics, prior psychological state, and the way in which one usually thinks at the baseline level, whereby these factors are key to understanding how social media impacts different people. In their writing, Appel, Gerlach, and Crusius (2016) described that social media application, including Instagram, are bad for the persons who are vulnerable to anxiety, low self-esteem, or depression since such application triggers activities such as social comparison.

In a similar vein, Vannucci, Ohannessian, and Gagnon (2019) used DSMM to examine the association between passive SM use and depressive symptoms. The researchers established that high dispositional anxiety and low self-esteem made participants more vulnerable to developing depressive symptoms especially when posting a passive attitude on social media platforms by passively consuming other people's content. This is in support of the DSMM postulation which posits that individual differences determines the extent to which use of social media can impact on mental health.

B. Developmental Susceptibility and Social Media

Developmental susceptibility, which draws attention on how ability and personality influence media effects, is one of the most important components of DSMM, particularly regarding youths and adolescents. Valkenburg and Piotrowski (2017) in their cross-sectional study self and virtual presented how developmental factors affect adolescents' responses, the youth stated that the younger group is particularly sensitive to peers' reactions, social comparison and cyberbullying owing to their developmental tasks including identity and emotional development. By influencing self-esteem, body image, and emotional well-being. Studies confirmed the DSMM's hypothesis that age and developmental stage significantly affect the social media impact.

Similarly, Nesi and Prinstein (2015) work supplements DSMM's emphasis on susceptibilities that may be developmental. They also analyzed the effect of adolescents' online social interaction and feedback seeking and social comparison on their mental health whose consequences included anxiety and depressive symptoms. Young adults, especially adolescents, who are in a phase of identity formation were identified to be more sensitive to peer opinion and therefore more likely to seek social approval through Instagram and snapchat. This developmental sensitivity to peers in the use of social media explains why the DSMM is important in capturing the effects of media seen by adolescents.

C. Social Susceptibility and Social Media

Some of the antecedent factors that help to explain or moderate the effects of social media are social susceptibility factors such as influence from friends and family as well as social context. As highlighted by Frison and Eggermont (2016) social interactions on social media are as a result of the peer pressure hence the effects

may be positive or negative depending on the circumstances surrounding the adolescent. The researchers used DSMM to investigate if peer support can reduce the impact of negative social interaction like cyberbullying, social exclusion. According to the results, the authors identified that the adolescents with higher level of perceived peer support did not experience negative impact of online experiences moderating by social susceptibility.

Similarly, Coyne, Walker, and Howard (2017) working on the checklist of family socialization on social media usage and psychological well-being in the adolescence. Following the guidelines of DSMM, the researchers have identified that parental moderation, including calm discussion of the content with the child, decreases adverse consequences of social networks use, including anxiety and loneliness. This gets to the reason and rationale to consider social susceptibility pointers like the family communication that play a role in how the users engage the social media platforms.

DSMM Theory and COVID-19

The Differential Susceptibility to Media Effects Model (DSMM) is an umbrella theory that aids in providing various ways in which media impacts the people depending on the amount of vulnerability. The extended periods of isolation, fear, and increased tech usage brought on by the COVID-19 pandemic have bolstered the need for investigating DSMM to comprehend how social media affects one's mental well-being during crises. DSMM's perspective of individual differences and contexts and can be used to analyze how one person has coped with the increased number of media related to the pandemic on Facebook, Instagram, Twitter and TikTok (Valkenburg & Peter, 2013).

The Role of DSMM in Media Effects During COVID-19

Consequently, the DSMM framework has been helpful in assessing the different effects that social media use brings to one's mental health during the pandemic. During the lock downs, social media played a major role as source of information and communication among individuals and their vulnerabilities defined how this media affected them. According to Valkenburg et al. (2021), DSMM defines dispositional, developmental and social susceptibility as being especially important during a crisis media effects may therefore become more significant based on one's personality, developmental stage or the environment (Valkenburg et al. 2021).

Research carried out during the pandemic like the one done by Gao et al., (2020) have used DSMM to show that individuals with more signs of anxiety or fear of illness would get more anxious after coming across social media content with the virus information. Therefore, this work emphasizes the role of individual vulnerability when studying the pandemic's psychological effects using DSMM.

A. Dispositional Susceptibility and Mental Health During COVID-19

Dispositional susceptibility comprises intrinsic attributes of a given person that shapes his or her responses to media and the extent to which he or she is influenced by it; it includes personality, emotional disposition, or even mental health. In COVID-19, these factors are so useful in ascertaining who is most susceptible to having poor mental health due to social media. DSMM is an approach to explore the psychological impact of enhanced social media use to the COVID-19 topic. There was identified that the patients with the high level of trait anxiety reported the deleterious consequences for their mental health, the increased levels of panic and stress, associated with the daily consumption of unfavorable information about COVID-19, shared in social networks, such as Twitter and Facebook (Li et al., 2020).

In the same manner, Garfin, Silver, and Holman (2020) showed that people with health anxious tendencies were more susceptible to the 'infodemic' and the spread of fearful news in social media during the pandemic. The reason why these individuals were more affected due to Dispositional factors were explained by DSMM as such people are more anxious and panic prone being vulnerable to consumptions of panic fueling content on digital platforms.

B. Developmental Susceptibility and Social Media Use During COVID-19

Developmental susceptibility is cognizant on the manner in which an individual's development of their cognition and emotions determines their reception of media. They have been very vulnerable to mental health impacts of social media since they are in their adolescent or young adult stage when they are so dependent on society when it comes to issues of emotional and social development. Ellis, et al (2020) used the DSMM to explore why youths and young people were most affected by the pandemic's effects on mental wellbeing. They established that youths especially during the lockdown, who are highly dependent on interpersonal interactions, are more vulnerable to depression and anxiety resulting from social comparison, fake news and cyberbullying prevalent in the social media platforms. The study has concluded that due to the continuous identity formation and elevated emotional susceptibility of adolescents, they are double susceptible to adverse impacts of social media in the period of COVID-19.

The above study was further supported by Viner et al. (2020) where the author explored the effects of social media use on the mental well-being of adolescents during school shutdowns. According to the study done under DSMM, it was revealed that with social distancing, people especially adolescents have no other option than to spend time on digital platforms in search of social contacts making them more vulnerable to cyberbullying, social

isolation. This developmental vulnerability put adolescents at the risk for depressive symptoms and anxiety during the pandemic most especially (Viner et al., 2020).

C. Social Susceptibility and Media Influence During COVID-19

Social susceptibility entails the impact of social factors in the person's environment including the family, friends, and social setting on the literacy and impact of the media. The COVID-19 pandemic, which led to restricted interaction between people and encourage self-isolation stressed the role of online communication, in which social media plays a major role. By using the proposed theory called DSMM, O'Reilly, Dogra, and Hughes (2020) can claim that people who had fewer offline social relationships got more influenced by negative media content during the pandemic. In their study, they discovered that the lack of social support from the family or friends may lead more often to seek social support on social sites and may be more vulnerable of the effects of cyberbullying, fake news, and negative social comparison (O'Reilly et al. , 2020).

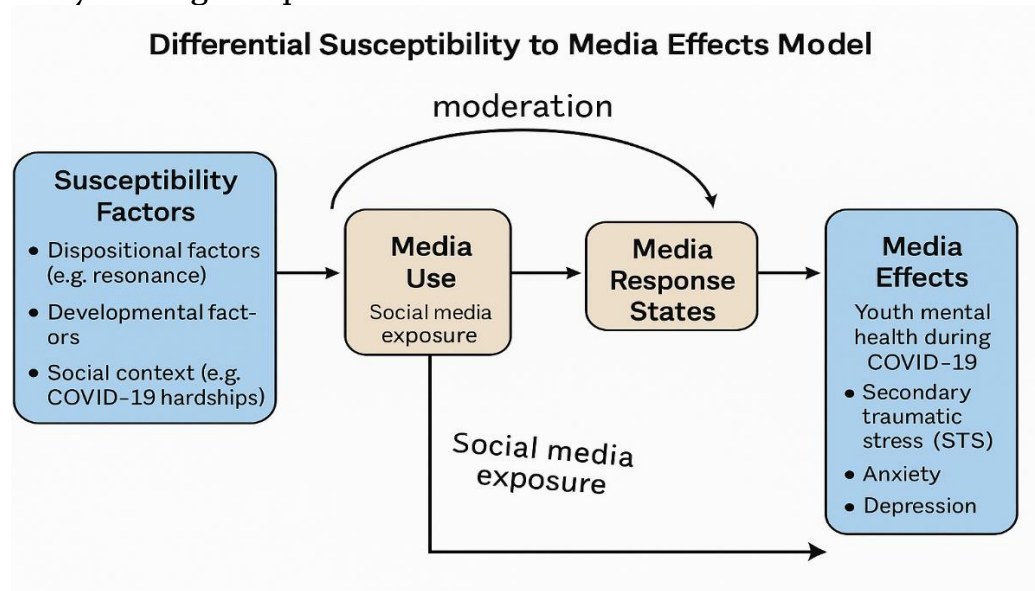
Another study by Liu et al., (2020) sought to explain the effects of parental involvement as well as mediation on children's vulnerability to the negative social media impacts during the period of the pandemic. The study using DSMM, that child whose parents joined them in the discussions of the media contents that the children were exposed to were less influenced by negative media factors including anxiety causing news and fake news. This shows the role of DSMM in explaining how parental mediation, for instance, can either reduce or increase the impact of social media usage at a time of crises like COVID-19.

Misinformation, Social Media, and DSMM During COVID-19

The issue of fake news which was evident through the circulating fake news in the NBA was one of the biggest impediments of year 2020 as it continued to disseminate fake information on the social media platforms. In the view of Vosoughi, Roy, & Aral (2018) the discovering conducted with the help of DSMM is helpful to illuminate the exactly why particular people tend to believe in and to propagate definite misinformation. This section contends that there are some pre-existing factors that pose an individual at a higher risk of consuming and sharing information regarding COVID-19 that is fake. The same study confirmed that persons with anxiety and / or fear will be more inclined to interact with articles about the virus that is alarming them more and deepening their mental health problems (Vosoughi et al., 2018).

Similarly, Tasmin, Hossain, and Mazumder (2020) employed the DSMM to investigate the nature of misinformation that relates to COVID-19 vaccines on social media and the effects on mental health. The researchers revealed that people with higher dispositional anxiety or lower media literacy were the ones more easily influenced by the media they read, and as a result, developed a belief that vaccines are unsafe contributing to their

fear towards the vaccines. This is because, as seen with the analysis of susceptibilities in the later chapters of this paper, DSMM greatly emphasizes individual susceptibilities; the reason misinformation had such a huge impact on the mental health of the society during the pandemic.



Discussion and Conclusion

Discussion

This meta-analysis set out to examine how social media exposure during the COVID-19 pandemic influenced mental health outcomes among youth, specifically anxiety, depression, and secondary traumatic stress (STS), and to interpret these relationships through the lens of the Differential Susceptibility to Media Effects Model (DSMM). The results revealed a consistent, though varying, association between frequent social media use and elevated levels of psychological distress among young people aged 15 to 24. These findings align with previous research that has documented increases in mental health concerns during the pandemic, especially among adolescents and young adults who relied heavily on digital platforms for information, connection, and emotional expression.

The DSMM framework helped explain the nuanced differences observed across studies. As proposed by Valkenburg and Peter (2013), media effects are not universal; rather, they are shaped by individual differences (such as personality traits and emotional regulation), developmental characteristics (such as age and cognitive maturity), and social-contextual factors (such as family environment or peer influence). These dimensions help clarify why some youth experienced heightened psychological vulnerability, while others did not report the same levels of distress despite similar media exposure. For example, adolescents with pre-existing anxiety or those lacking offline support systems may have been more susceptible to distressing news, misinformation, or negative social comparisons encountered online.

The findings also highlight how the COVID-19 pandemic intensified the impact of social media use. Lockdowns and social distancing increased reliance on digital communication, which while beneficial in maintaining social ties also exposed youth to a constant stream of pandemic-related content, including fear-inducing news, personal loss stories, and conflicting health information. These stressors, in combination with developmental sensitivity and isolation, likely contributed to the rise in mental health symptoms.

Moreover, this study suggests that the way youth engage with social media passively scrolling versus actively interacting may influence psychological outcomes differently, a dynamic that fits well within DSMM's emphasis on media use patterns. However, most of the included studies did not differentiate between types of use, indicating a gap in the literature and a potential direction for future research.

Conclusion

This paper reinforces the importance of theory-driven research in understanding the psychological effects of social media on youth. The Differential Susceptibility to Media Effects Model offers a valuable lens through which to examine why certain individuals are more vulnerable to negative media outcomes, especially during times of societal disruption. By synthesizing studies published between 2013 and 2025, this meta-analysis not only affirms the relevance of DSMM but also demonstrates its applicability to contemporary digital behavior and public health crises.

These insights have practical implications. Mental health professionals, educators, and policymakers should consider the diversity of youth experiences online and tailor support efforts accordingly. Interventions should move beyond simply reducing screen time and instead promote digital literacy, emotional resilience, and safe online spaces for young users. As social media becomes increasingly intertwined with youth development, especially during times of crisis, applying nuanced, person-centered theories like DSMM will be essential to both understanding and supporting mental well-being.

Moreover, DSMM is theoretically robust yet flexible, making it applicable across different types of media (e.g., Instagram, TikTok, YouTube), psychological outcomes (e.g., anxiety, depression, STS), and crisis contexts (e.g., the COVID-19 pandemic). It not only explains media impact after it happens but also provides a predictive framework for anticipating which individuals might be most vulnerable to digital harm.

In light of increasing concerns over youth mental health in the digital age, especially during global disruptions like the pandemic, DSMM offers a more comprehensive and human-centered lens to understand the complex interaction between media and mental well-being. Giving it more value in research helps move the field forward beyond general associations toward targeted interventions and more effective, evidence-based

solutions.

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