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ASSESSING SOCIAL MEDIA HABITS FOR WORSENING SYMPTOMS OF DEPRESSION

Daniel Peters

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ASSESSING SOCIAL MEDIA HABITS FOR WORSENING
SYMPTOMS OF DEPRESSION

by

Daniel Peters

A Doctoral Project
Submitted to the Graduate School,
the College of Nursing and Health Professions
and the School of Leadership and Advanced Nursing Practice
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Nursing Practice

Approved by:

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ABSTRACT

This project was created to assist providers working in the mental health field in treating patients with major depressive disorder (MDD) by assessing for problematic social media use (PSMU), which may exacerbate symptoms of depression. A Likert scale style questionnaire, which was accessible online for clinicians, was developed and used to assess psychiatric patients between the ages of 18-35 with a diagnosis of depression using specific questions about the patient's social media use, which research regards as having the potential to worsen depressive symptoms. This survey helped determine if PSMU may be considered as an area for assessment in patients with depression based on data collected, as well as patient and clinician feedback. Education about PSMU and strategies for modifying use was included based on current research recommendations. A pre-and post-intervention depression screening was completed by each participant to determine, individually, if depressive symptoms showed improvement at a two-month follow-up.

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DEDICATION

For my wife, Heather, whose incredible patience, empathy, and unyielding resolve were integral to the completion of this project and the value of which cannot be expressed enough. To my mother, Lorie, and my father, Steven, whose encouragement and reassurance helped bolster my resolve to maintain momentum towards the completion of this project. For everyone who helped me reach this point, I am forever grateful.

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LIST OF ABBREVIATIONS

<i>ADHD</i>	Attention Deficit Hyperactive Disorder
<i>BSMAS</i>	Bergen Social Media Assessment Scale
<i>CINAHL</i>	Cumulative Index to Nursing and Allied Health Literature
<i>COVID-19</i>	Coronavirus Disease of 2019
<i>DNP</i>	Doctor of Nursing Practice
<i>DSM-5</i>	Diagnostic and Statistical Manual of Mental Disorders-5
<i>FOMO</i>	Fear of Missing Out
<i>IRB</i>	Institutional Review Board
<i>MDD</i>	Major Depressive Disorder
<i>PHQ-9</i>	Patient Health Questionnaire-9
<i>PICOT</i>	Patient, Intervention, Comparison, Outcome, and Time
<i>PSMU</i>	Problematic Social Media Use
<i>USM</i>	The University of Southern Mississippi

CHAPTER I - INTRODUCTION

Social media is one of the fastest growing and widely used forms of communication technology; the average time spent on social media daily in the United States was two hours and three minutes (Dixon, 2022). Though hundreds of social media platforms exist, similarities among them include the ability to create user profiles, connect with other users and groups, and share texts, photos, and videos. As social media has become a common part of life for many, a growing body of evidence supports assessing PSMU in psychiatric settings as a part of routine assessment, specifically in relation to worsening symptoms of depression and anxiety. Additionally, the isolating effects of the Coronavirus Disease of 2019 (COVID-19) have led to a heavier reliance on social media resulting from social distancing measures, further warranting attention from medical professionals.

While social media has the potential to be beneficial in many new ways, it may be similarly harmful in others. A generalized assessment for problematic patterns of use would grant providers and patients a stronger sense of whether social media could potentially exacerbate symptoms of depression and anxiety. Providers would then be able to educate patients about modifying their use if necessary.

Observers note the increased rate of depression and suicide among adolescents coincides with the advent and widespread use of social media (Vidal et al., 2020). Correlation does not imply causation and must be emphasized as this statement is not meant to create fear; however, further investigation is warranted to determine how these events are related, especially considering the increase in depression and suicide are not explained by economic factors like unemployment or the Dow Jones index when

compared by year (Twenge et al., 2017). As PSMU is not currently a routinely assessed area in psychiatry, this project sought to incorporate current research findings and recommendations for practice in order to begin implementing a standard social media assessment tool which can assist providers treating patients with MDD in a clinical setting.

Background and Significance

Psychological distress has grown substantially throughout the general population, resulting from the impacts felt with the COVID-19 pandemic (McGinty et al., 2020). There is a pressing need for finding simple, cost-effective treatment strategies for better patient outcomes. This project aimed to assist patients with depression, as well as clinicians who treat patients with depression, by assessing for specific patterns of social media use which were associated with exacerbating symptoms of depression and anxiety.

The percentage of United States citizens who actively used some form of social media in 2019 was 79% of the population, or approximately 247 million (Dixon, 2022). Additionally, 84% of 18- to 29-year-olds use online social media in some capacity (Auxier & Anderson, 2021). Due to social distancing measures required during the COVID-19 pandemic, social media was used to a greater extent to maintain interpersonal relationships. Social media had also become a popular focus area for studies that examined social media's influence on mental health.

Problem Statement

If specific patterns of social media use are associated with worsening symptoms of depression and anxiety, a routine assessment may be necessary to determine if usage patterns are exacerbating symptoms, thereby expanding options for patient care. There is

no substitute for providing a standard treatment plan, and each patient has their own unique circumstances requiring additional consideration; the goal of the measure outlined was to facilitate standard treatment and sought to present optimal conditions for the patient which could maximize their chances for a successful recovery.

Project Aim

The purpose of this project was to implement an assessment tool for PSMU in patients diagnosed with depression, as well as education about modifying problematic use if necessary. An assessment tool using a Likert scale format was used to determine if PSMU was present, potentially exacerbating depressive symptoms. Methods for modifying online habits were discussed with the patient based on research recommendations for improving depressive symptoms related to PSMU.

PICOT

When the clinical inquiry was guided using the patient, intervention, comparison, outcome, and time (PICOT) format, the question developed asked; “Would an assessment/intervention tool, which identifies problematic social media habits linked to worsening symptoms of depression, improve clinical outcomes compared to standard treatment alone for patients aged 18-35 with a diagnosis of depression?” An assessment of PSMU in patients with depression may offer additional treatment options based on findings through possible cognitive/behavioral therapy. There is no substitute for providing a standard treatment plan, and each patient will have their own unique circumstances requiring additional consideration; the goal of the measure outlined is facilitating standard treatment and seeking to present optimal conditions for the patient which can maximize their chances for a successful recovery.

Framework for the Study

The Iowa Model of Evidence-Based Practice was used to guide the implementation of this project. Steps outlined first identifying the problem which prompted the need for a change in practice; followed by a search and appraisal of evidence, determining the merit of the evidence, and conducting research if it was found lacking. If evidence was reliable, attempt a pilot study for practice change. Finally, appraisal of the pilot; if successful, disseminate findings and implement change to practice (Titler et al., 2018).

Synthesis of Evidence

Search Process

The Cumulative Index to Nursing and Allied Health Literature (CINAHL) database was used to find research evidence. A search was performed for *social media and mental health*, written in English, peer-reviewed articles with full text, published after January 2010, which gave 354 resulting matches. Search results were narrowed to include the terms: “social media”, “depression”, and “mental health”, published after January 2010, in English, peer-reviewed with full text available; with 58 matches. The articles which were published in journals of psychology/psychiatry and mental/behavioral health were preferred sources for selection.

A common finding shared between studies acknowledged the link between social media and mental health was largely dependent on individual experiences and emotions with social media, rather than volume of social media use or exposure; however, high volume and/or high-frequency usage of social media (over 60 minutes per day, checking social media 5 times or more daily) showed significantly higher odds (at a ratio of 3.13)

for worsening symptoms of depression (Shensa et al., 2018). Studies that reveal the influence of social media use on an individual's emotional state is a relatively new occurrence as social media itself, and findings vary depending on the metric being used. However, a recurring trend showed evidence that suggested several common associations between worsening symptoms of depression and anxiety in relation to specific social media habits.

Negative Emotional Correlation

There appeared to be a consensus that negative emotions are unlikely to develop in otherwise emotionally healthy individuals because of social media use alone. Even so, certain mood patterns like fatigue and isolation were correlated with initializing social media use and may increase the severity of each mood state which preceded it (Aalbers et al., 2019). The effects of media use are multifactorial and depend on the type of media, the type of use, the amount and extent of use, and the characteristics of the individual (Chassiakos et al., 2016).

Aspects of social media use that may be related to worsening symptoms of depression are lack of face-to-face interaction, perceived isolation, loss of self-esteem, neglect of healthy behaviors, loss of concentration, sleep deprivation, and cyberbullying (Thapa & Subedi, 2018). Social overload, envy, jealousy, and relationship dissatisfaction also may be pertinent factors in worsening mood (Abbasi & Drouin, 2019). Disruption of healthy behaviors due to social media preoccupation, dubbed "Facebook intrusion," showed a positive association with time spent using social media, as well as symptoms of depression (Parent et al., 2019).

Perceived Isolation

The perception of others, and oneself, can be heavily influenced to the point of distortion by certain experiences through social media interaction. One possible explanation for this distorted perception is that a sense of “depressed envy” can take hold after interacting with others who may hold the appearance of being more successful or those who may seem to have a better quality of life, leading to the individual user’s sense of self-becoming diminished by dwelling on feelings of inferiority (Pera, 2018).

Social Comparison

Upward social comparison is believed to be more common on Facebook than downward social comparison, which can diminish self-esteem. How others are perceived becomes especially crucial during childhood and adolescence for identity development and self-appraisal; with an upward comparison being drawn from social media platforms, where information made available is often highly curated and heavily filtered, great lengths may be taken to exclude content deemed less than flattering, and it can feed heavily into the observing individual’s unrealistic self-expectations. One survey illustrated the prevalence of such online content filtering, as nearly half of the 1,710 respondents admitted to editing pictures of themselves before being uploaded to their social media, with another 12% stating they edit themselves because of feeling inherently unhappy with their personal appearance in general. This habit additionally becomes harmful to the editing user’s self-esteem and fuels additional detriment toward body image issues (Kleemans et al., 2016).

Negativity Bias

Primack et al. (2018) surveyed 1,179 full-time students, aged 18-30, to measure associations between both positive and negative experiences on social media, with changes in depressive symptoms. These researchers found with each 10% increase in positive online experiences, the odds of depressive symptoms decreased by 4%, yet was not statistically significant; yet every 10% increase in negative experiences was associated with a 20% increase in odds of depressive symptoms. Individuals who feel more connected emotionally to social media may be more susceptible to negative social interactions and feedback, which can increase their risk for depression (Shensa et al., 2018).

Bergen Social Media Addiction Scale (BSMAS)

The BSMAS is a 6-item questionnaire using a 5-point Likert scale, which measures an individual's addiction to social networking sites (Lin et al, 2017). The six items were based on the theoretical framework of addiction components, with higher scores reflecting more problematic usage of social media. A modified version of the BSMAS was used with a focus on problematic social media usage as it pertains to people with depression, and exacerbation of depressed symptoms, rather than social media addiction alone.

Social Media Disorder Scale

A series of online surveys conducted among 2,198 adolescents measured validity, consistency, sensitivity, and specificity for the development of a 9-item social media disorder scale, based on the 9 criteria for internet gaming disorder within the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) (Van den Eijnden et al., 2016).

The results found a medium positive correlation between frequency of daily social media use and depression and/or attention deficit hyperactive disorder (ADHD), as well as a weak-moderate positive association with loneliness and impulsivity.

Doctor of Nursing Practice (DNP) Essentials

The American Association of Colleges of Nursing lists eight essential competencies for DNP graduates, which are core components of advanced nursing practice (AACN, 2006, p. 8). The following DNP Essentials were met during the course of this project:

DNP Essential I: Scientific Underpinnings for Practice- This project was guided by current research and recommendations regarding PSMU.

DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice- This project utilized numerous studies which focused on PSMU specifically linked to worsening depressive symptoms in patients with MDD. An adapted version of the BSMAS was developed to identify known aspects of PSMU and the extent to which depressive symptoms may worsen as a result.

DNP Essential V: Healthcare Policy for Advocacy in Healthcare- The goal of this project is to implement a practice of assessing for PSMU which, will offer providers additional information and treatment strategies for improving patient outcomes.

DNP Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes- This project was developed through an ongoing collaboration with other healthcare professionals to formulate and implement practice changes related to the project.

DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health- No universal practice currently exists for assessing PSMU, which if used will offer providers additional information about habits that may affect patient outcomes.

DNP Essential VIII: Advanced Nursing Practice- This project aims to implement a standard assessment for PSMU based on current research and with input from psychiatric nurse practitioners.

Summary

The focus of the study was to improve symptoms of depression in patients with MDD which were exacerbated by problematic social media use. Specific social media habits to identify associated with worsening symptoms of depression and methods for modifying said problem habits were guided by research. Tools selected to measure desired outcomes, interventional goals, and methodology used in the study were based on assessing and modifying problematic social media habits related to worsening symptoms of depression.

CHAPTER II - METHODS

This project implemented a standardized screening for depression using the Patient Health Questionnaire-9 (PHQ-9) to obtain a baseline measure of depressive symptoms for each participant. Each participant completed a modified version of the BSMAS to determine the degree to which problematic social media usage may have exacerbated depressive symptoms. An educational intervention was used by developing a patient handout that identified social media habits linked to worsening depression and different methods for modifying online habits.

Tools

Assessment of several specific social media behaviors associated with symptom exacerbation was the primary focus of the study. A questionnaire using a Likert-scale format and a modified version of the BSMAS was developed for use in this project, driven by evidence from relevant literature, to identify problematic social media behaviors correlated with symptom exacerbation: what motivated the patient to use social media, perceptions, and interactions with others through social media (feeling obligated to friends/family to use social media, believing social media as necessary to maintain relationships, fear of missing out), excessive reassurance-type behaviors, “active” versus “passive” social media use, and whether disruption of daily activities like sleep, work, school, etc., were areas associated with worsened depressive symptoms (Bekalu et al., 2019; Forchuck et al., 2020). The final modified BSMAS questionnaire is represented in Appendix A.

Recruitment

A recruitment period that lasted an initial two weeks occurred at an outpatient clinic with the assistance of a psychiatric provider who had previously established patient care. Patients aged 18-35 with a diagnosis of MDD were asked to participate during intake for previously scheduled psychiatric appointments, at which point written and informed consent was given. A second two-week period took place 8 weeks after the initial recruitment period began, during which patients would begin returning to the clinic for a two-month follow-up if scheduled as such. 31 patients met the initial study criteria; however, only 12 patients completed the additional criteria of not requiring adjustments to medication and returning to the next appointment within the recruitment period.

Intervention

Patients identified with a diagnosis of depression and moderate risk or higher for PSMU were educated about potential symptom exacerbation, in addition to discussing strategies for modifying social media use. Handouts were given to providers which explain the assessment tool and suggestions for addressing PSMU including,

- limiting frequency and/or duration of social media use;
- deleting or hiding social media applications from electronic devices;
- practicing mindfulness while using social media;
- maintaining active social media use rather than passive;
- turning off notification settings from social media applications.

Study of the Intervention

The intervention used two main steps. First, the risk of social media habits worsening depressive symptoms was measured using the modified BSMAS for each

participant. An educational intervention was employed via a written handout which outlined current knowledge about PSMU in addition to suggested methods for modifying social media use. Participants seen at the two-month follow-up appointment were then asked if personal social media use was modified.

Measures

The Patient Health Questionnaire-9 (PHQ-9) is a self-administered assessment tool designed for screening patients for depression, the severity of depression symptoms, and monitoring treatment. The validity of the PHQ-9 is well established; scores greater than 10 have an 88% sensitivity and 88% specificity for MDD (American Psychological Association [APA], 2020). A baseline PHQ-9 score was established for each participant, followed by an assessment for PSMU.

Determining if outcomes improved was accomplished by comparing scores from previously completed emotional screenings to screening scores post-intervention; a decrease in the total score indicated an improvement in patient symptoms. Improving patient outcomes and patient satisfaction were the main performance measures being assessed; however, outcomes may have been influenced by factors unrelated to project interventions. Baseline patient scores were considered the control for each patient. Comparing data to a control group helped determine if outcomes were related to project interventions. The steps needed to reach the goal of reducing symptom severity for depression and anxiety potentially worsened by social media use are:

- 1) Identify patients with a diagnosis of depression who regularly use social media.
- 2) Obtain patients' baseline PHQ-9 score.

- 3) Have patients complete the social media use questionnaire.
- 4) Determine the likelihood of PSMU for worsening symptoms of depression, as low, moderate, or high correlation per questionnaire scores.
- 5) Discuss adjusting social media habits with patients.
- 6) During follow-up, obtain post-intervention PHQ-9 scores and determine if changes were made to social media use. If the patient did not modify their social media use, data can still be used for comparison.
- 7) Compare individual pre- and post-intervention PHQ-9 scores.
- 8) Compare pre- and post-intervention PHQ-9 scores in relation to patients' questionnaire scores ranked in order of low, moderate, or high correlation.

The Hexagon Tool provided by The Doctor of Nursing Practice Essentials (Zaccagnini & White, 2017) helped further planning, “identifying need from the project for the patient population,” (p. 452); the population of interest needed this measure due to a potential to assist treatment for their emotional recovery. In addressing the fit for initiatives, it would be suitable for any institution that treats patients, since the project was attempting to promote conditions that were conducive to improving patient outcomes. Resource requirements are minimal since the initiative only seeks the use of the questionnaire which will be accessible online.

Analysis

Each patient's initial PHQ-9 scores were used as a baseline which was compared to their PHQ-9 taken 8 weeks after the intervention was used, during their return appointment. The scores from patients who required changes to their medication were not used, as any change seen in PHQ-9 scores at follow-up would likely result from the

effects of pharmacological adjustments. The goal of this project was to see a reduction in post-intervention PHQ-9 scores compared to baseline PHQ-9 scores, which would indicate a decreased severity of depressive symptoms.

Ethical Considerations

Contrary to the statements presented so far, there is opposing evidence that holds that social media's influence on emotion is not only negative, and social media has potential merit in several areas for promoting positive emotional effects from social interaction and bonding with others (support groups, hobbyist forums, etc.). The main distinction this project focused on was regarding PSMU and worsening depressive symptoms in individuals previously diagnosed with MDD, as opposed to whether social media use, in general, may have caused depressive symptoms in otherwise non-depressed users.

From this point, it is entirely possible for an individual who, after modifying their social media use until their emotional state is improved, may later be able to experience positive effects from the interaction instead. Subsequent effects will depend on the information gathered from the initial assessment findings to determine whether social media habits have a higher likelihood to exacerbate the patient's symptoms, as successfully predicting negative associations from social media is largely reliant on the context of how it is being used, rather than generalizing whether social media use alone is responsible, or amount of time spent using social media.

Formal IRB approval for protocol number 21-322 was obtained from the USM Office of Research Integrity with an approval period beginning May 24, 2022, to May 23, 2023. Written consent was obtained from each participant and secured off-site in a locked

container. Stored data is password protected, concealed in an unmarked hidden folder with personal identifiers removed, and will be destroyed once applicable.

Summary

A modified BSMAS was used to measure each participant's risk of PSMU for worsening depressive symptoms. Depressive symptoms were measured using the PHQ-9, which was completed upon recruitment along with the modified BSMAS, and educated about how to modify PSMU. Participants completed a second PHQ-9 at their 2-month follow-up and asked if they modified social media usage. PHQ-9 scores were observed for any change from baseline to determine if depressive symptoms had improved.

CHAPTER III - RESULTS

Data collected for each of the 12 participants included two PHQ-9 screens to measure depression and a modified BSMAS to assess social media habits. Participant data was arranged based on modified BSMAS scores and ranked from lowest to highest while paired with the respective PHQ-9 scores of each participant. The PHQ-9 scores taken at follow-up were compared to the baseline PHQ-9 individually, and each participant served as their control group. Table 1 illustrates the total scores for each participant.

Table 1

Paired PSMU scores with pre- and post-intervention PHQ-9 scores

Patient #	PSMU Score	Risk	PHQ-9 (1)	PHQ-9 (2)	Modified SMU?	Change in PHQ-9
8	8	Low	2	2	No	No Change
5	10	Low	9	10	No	Increase
2	16	Low	9	9	No	No Change
1	17	Moderate	7	5	Yes	Decrease
4	19	Moderate	27	23	Yes	Decrease
11	20	Moderate	8	6	No	Decrease
6	21	Moderate	3	2	No	Decrease
12	23	Moderate	16	13	Yes	Decrease
7	25	Moderate	4	2	No	Decrease
10	27	High	11	9	Yes	Decrease
3	28	High	12	9	Yes	Decrease
9	34	High	8	6	Yes	Decrease

Significance of Results

Increased PSMU scores were predicted to have a likelihood of problematic social media habits as potentially worsening symptoms of depression, meaning the PHQ-9 scores of participants with lower risk of PSMU were not as likely to be influenced by social media use compared to participants with moderate and high-risk PSMU scores. Several participants were observed with relatively low risk for PSMU yet had higher

PHQ-9 scores than participants with moderate and high-risk PSMU scores which was not unexpected. PHQ-9 scores taken before and after the intervention were compared to help determine if PSMU may have contributed to worsening symptoms of depression for the participants who decided to adjust their personal social media use.

The total number of participants with decreased follow-up PHQ-9 scores was 9. The PHQ-9 cutoff scores of 5, 10, 15, and 20 represent mild, moderate, moderately severe, and severe symptoms of depression, respectively (Kroenke, 2001). A total of 4 participants had initial PHQ-9 scores greater than 10; of which 3 scored high-risk for PSMU, and 1 had moderate-risk for PSMU. 6 participants stated they had modified personal social media usage as discussed in the educational handout, and 6 participants did not modify social media usage. Two participants in the low-risk PSMU group showed no change from baseline PHQ-9 on return, and one participant had a PHQ-9 that increased at follow-up. Participants in the moderate and high-risk PSMU group showed lower PHQ-9 scores at follow-up compared to baseline on an individual basis. Figure 1 illustrates the change in each participant's PHQ-9 score pre-and post-intervention.

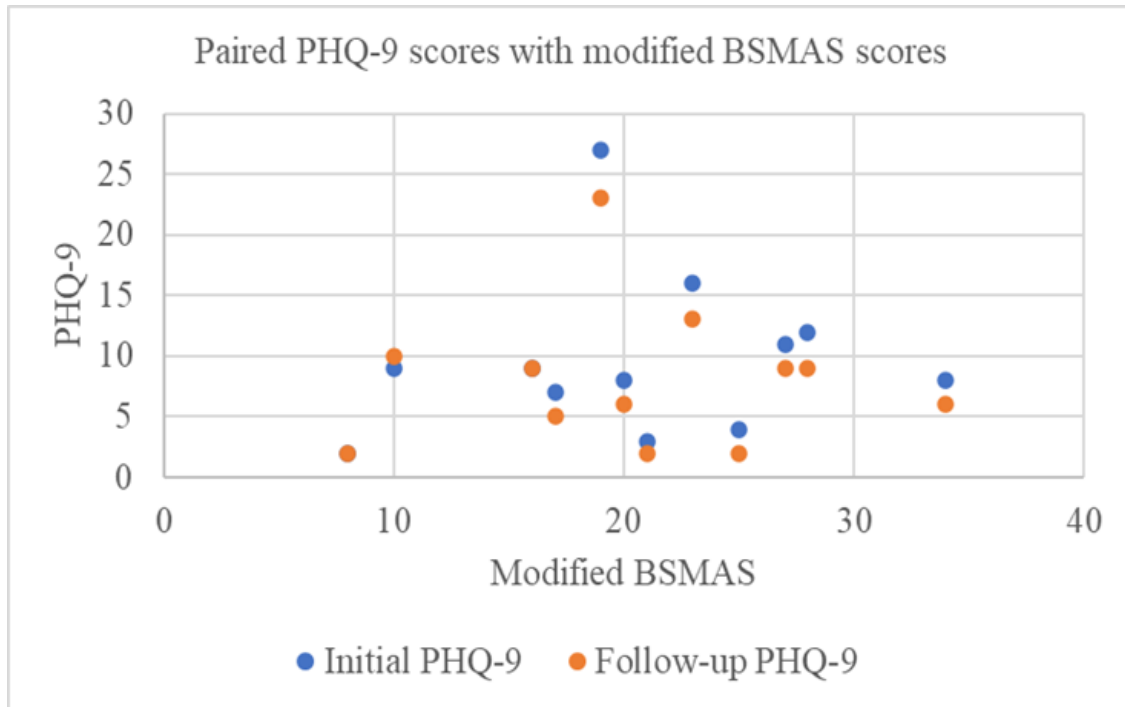


Figure 1. Paired pre- and post- intervention PHQ-9 with modified BSMAS

Six out of twelve participants reported implementing a change to their social media use. Of those 6, all had a noted decrease in their follow-up PHQ-9 scores. three of those six participants scored a high risk of their PSMU causing worsening symptoms of their depression, and the remaining three patients all had moderate risk scores. Of the other six participants who did not implement any changes to their social media use, three scored a low risk of their PSMU causing worsening symptoms of their depression. two participants had no change between their initial and follow-up PHQ-9 scores, and one participant showed an increase in the follow-up PHQ-9 score.

Significance of Questions

The individual questions and their collective responses were also analyzed. Questions one, two, three, and five helped the reviewer determine how the participant used social media and to what extent. Question one asked how much the participants

agreed that social media was important for helping maintain relationships with friends/family. A stronger agreement with this statement may be more indicative of an individual having greater emotional attachment from social media use, which was associated with negative health outcomes (Bekalu et al., 2019). This may have also reflected feeling an innate need to use social media out of concern that personal relationships may become weakened or lost if social media presence is not maintained, which was cause for concern.

Question two asked how much the participant agreed that he/she loses track of time while using social media, and question three asked how much the participant agreed he/she was more likely to use social media to help forget about his/her problems or out of boredom. The response to these statements may have reflected whether social media use was passive versus active and being more likely to lose track of time if using social media in a passive manner, especially if they were using it as an outlet for escape, or out of boredom. Question five asked how much the participant agreed that he/she usually browses/surfs through social media more than directly interacting (posting content, messaging, etc.). This question was designed to determine the extent of passive social media use, which may indicate problematic usage.

As with face-to-face communication, users could hold an emotional response to interactions through social media. Questions four, six, seven, and eight helped the reviewer determine the emotional significance behind their individual responses to the statements. Question four asked how much the participant agreed that he/she felt like he/she would be missing out on important things if he/she stopped using social media. This question sought to determine if fear of missing out (FOMO) was present, which is

described as anxiety, unease, or apprehension caused by a belief that the individual is missing out on important events or social opportunities due to their absence from social media (Gupta et al., 2021). Though, question six asked how much the participant agreed that he/she often encountered negative or heated exchanges on social media. This statement helped the reviewer determine how the participant viewed the environment of their social media use and may have indicated the presence of cyberbullying, harassment, online toxicity, and generally negative attitudes and behavior.

Question seven asked how much the participant agreed he/she does often edit/remove posts on social media out of concern for how others may react. Also, question eight asked how much the participant agreed that he/she felt like other people's lives were more fulfilled than his/her own when browsing their social media. The participant's responses to these questions helped the reviewer determine the significance or extent to which self-image and self-esteem may have been affected by how they believe others perceive them.

Significance of Responses

Though this particular sample size was relatively small compared to the number of people who use social media as a collective, the proportions of responses to each question yielded as much implication as the questions themselves. Table 2 shows the percentages of responses to each question.

Table 2

Percentage of Responses to PMSU Questionnaire

	Question	Strongly Disagree					Strongly agree				
		1	2	3	4	5					
1	Social media is important for helping me maintain relationships with friends/family.	16.67%	25.00%	16.67%	25.00%	16.67%					
2	I lose track of time while using social media.	25.00%	16.67%	16.67%	33.33%	8.33%					
3	I am more likely to use social media to help forget about my problems or if I am bored	16.67%	8.33%	25.00%	16.67%	33.33%					
4	I feel like I would be missing out on important things if I stopped using social media.	41.67%	16.67%	16.67%	16.67%	8.33%					
5	I usually browse/surf through social media more than directly interacting (posting content, messaging, etc.).	25.00%	8.33%	33.33%	16.67%	16.67%					
6	I often encounter negative or heated exchanges on social media.	75.00%	8.33%	8.33%	0.00%	8.33%					
7	I often do edit/remove posts on social media out of concern for how other users may react.	41.67%	16.67%	25.00%	8.33%	8.33%					
8	I feel like other people's lives are more fulfilled than my own when browsing their social media.	41.67%	25.00%	8.33%	8.33%	16.67%					

Percentages of participant responses for how important social media was for helping them maintain relationships with friends/family were evenly distributed. Thirty three percent of participants responded that they agreed they lose track of time while using social media, and thirty three percent of participants responded with a strong agreement they were more likely to use social media to help them forget about their problems or if they were bored, which was highly suggestive that social media use for this sample was more passive than active. However, thirty three percent of participants

had a neutral response on whether they usually browsed/surfed through social media more than directly interacting (posting content, messaging, etc.).

Forty-one percent of participants responded with strong disagreement they felt like they would be missing out on important things if they stopped using social media, that they often edited/removed posts on social media out of concern for how other users may react, and that they felt like other people's lives were more fulfilled than their own when browsing their social media. Also, seventy five percent of participants responded with strong disagreement about often encountering negative or heated exchanges on social media. The weight of these responses suggested these areas may not have been as problematic for this sample of participants.

Summary

The data collected during the period in which the study was conducted yielded several findings. The results were organized in a manner that assisted in the comparison of each area measured, the proportion of responses on the social media assessment tool for each question, observations about the data collected, and both expected and unexpected findings.

CHAPTER IV – DISCUSSION

The intervention for this study was the adjustment of participants' social media use after receiving an education that focused on ways to modify social media habits for improving mental well-being. Measuring success was determined by comparing each participant's pre- and post-intervention PHQ-9 scores, with the goal of PHQ-9 scores showing a decrease post-intervention. Based on post-intervention PHQ-9 scores for participants who modified their personal social media habits, a reduction in depressive symptoms was measured. Participant feedback provided additional merit to some of the findings in this study. One participant wrote, "I do not like social media even though I'm on it." Another participant stated, "I've sworn off of social media before exactly for this reason, and it absolutely affects me mentally."

Limitations

There were several limitations in this study which will be addressed. Any participants who required medication adjustments at their initial visit were removed from the study given the potential for any changes in post-intervention PHQ-9 scores being more likely the result of psychopharmacological actions, confounding any notable changes which may have otherwise resulted from modification of social media use. Patients who were satisfied with their medication regimen may have had comparatively lower PHQ-9 scores if they felt their depressive symptoms were adequately managed by medication. The results were representative of small sample size and lacked randomized placement into true experimental and control groups, which limited options to perform hypothesis testing through statistical analysis since participant results were being compared individually effectively making each participant their control.

The study also relied on two-month follow-up visits which became problematic after an influx of new psychiatric patients required additional scheduling, thereby extending the time between follow-up visits for previously established patients and limiting the number of participants able to return within the recruitment period of the study. Participants who needed to reschedule or missed their follow-up appointment also limited the completion rate.

Social media use is a narrow focus of potential causes which may affect the mood of any given person, and how much of an influence it could have on mood is difficult to predict. This study was focused specifically on social media use for patients with MDD, and only patients with a primary diagnosis of MDD were recruited; there are nearly three hundred mental disorders listed in the DSM-5, and MDD quite frequently presents with additional mental health diagnoses. There are an untold number of ways in which problematic social media use could influence other mental disorders, or even MDD co-occurring with other mental disorders which could greatly alter the dynamics between social media and mood.

It is also difficult to know the extent to which participants modified their personal social media usage without continuous monitoring of online habits which would be far too invasive, impractical, and unreasonable. Patient autonomy is an integral part of medical care, and they must be willing to participate and implement recommendations made by the provider, as with any other medical decision.

Future Implications

The effects of social media on mental health are difficult to predict but understanding certain aspects of its use may aid in improving mental health. Problematic

social media use is not routinely assessed in most mental health clinics but may be worth consideration for providers in nonemergent settings, as it may give new insight and additional options when planning care. Other incentives for assessing social media habits include the prevalence of regular social media use, time and cost efficiency, ease of assessment, and no known potential to cause harm.

Future studies may find new aspects of online use to assess additional methods for modifying problem social media habits and habits which show stronger predictive value for problematic usage being present. Studies may also consider reassessment at different intervals for patients being observed, in addition to which specific habits patients modified and resulting change noted in mood, and how mood may respond when patients resume social media habits, which had been previously modified.

Conclusion

The results indicated an improvement in the measured depressive symptoms after participants with MDD were assessed for problematic social media habits and provided education related to PSMU and methods for modifying problem usage. Participants who reported modifying behaviors showed a more noticeable improvement in post-intervention PHQ-9 scores than participants who maintained regular use. Incorporating routine assessment of problematic social media use in an outpatient setting is worth considering given the general prevalence of patients who regularly use social media, cost and time efficiency, ease of assessment, and no known risk to health.

APPENDIX A – IRB Approval Letter

Office of Research Integrity



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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: 21-322
PROJECT TITLE: Assessing Social Media Habits for Worsening Symptoms Depression
SCHOOL/PROGRAM: Leadership & Advanced Nursing
RESEARCHERS: PI: Daniel Peters
Investigators: Peters, Daniel~Baskin, LaWanda~
IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited Category
PERIOD OF APPROVAL: 24-May-2022 to 23-May-2023

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

APPENDIX B – Letter of Support

Coastal Family Health Center

Date: 3/19/2021

RE: Letter of Support for Daniel Peters, BSN, RN

Attn: Facility Nursing Research Council Application Process-DNP BSN-DNP Student

To: Nursing Research Council Chair and Committee

This letter is in reference for Daniel Peters, BSN, RN who is applying to Coastal Family Health for application and approval of his Clinical Doctoral Project. The focus and title of his evidenced-based project is *Assessing Social Media Habits for Worsening Symptoms of Depression*. The site is a psychiatric outpatient clinic.

I have discussed this topic with Daniel Peters and support and recommend the need for a social media assessment/intervention tool for examining patients for worsening symptoms of depression, followed by an online provider survey. I understand that this assessment/intervention/survey analysis will be done for approximately 30 days. After data analysis, I understand that Daniel will present his findings to the ID team.

I understand that following approval by the Nursing Research Council, he will seek approval from the to The University of Southern Mississippi Institutional Review Board (IRB) for final approval of her Clinical Doctoral Project proposal. At present, I understand that Daniel Peters is a full-time BSN-DNP (PMHNP) student in the Doctor of Nursing Practice Program at the University of Southern Mississippi, Hattiesburg campus.

I am offering this letter of support of the doctoral student, Daniel Peters, in his doctoral project as titled above and look forward to hearing his findings.

I understand that participation by the ID team members is completely anonymous and voluntary. There is no compensation for their participation.

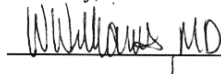
I understand the planned dates are 30 days from USM IRB approval is received.

I understand that letter of support will be included in the University of Southern Mississippi Institutional Review Board (IRB) application.

His Chair contact information is Dr. LaWanda Baskin, Ph.D., FNP,
Lawanda.Baskin@usm.edu and office 601-865-5100.

If there is any other information you should need, please do not hesitate to contact me.

Sincerely,



APPENDIX C – Modified BSMAS Questionnaire

		Strongly Disagree			Strongly agree	
	Question	1	2	3	4	5
1	Social media is important for helping me maintain relationships with friends/family.					
2	I lose track of time while using social media.					
3	I am more likely to use social media to help forget about my problems or if I am bored					
4	I feel like I would be missing out on important things if I stopped using social media.					
5	I usually browse/surf through social media more than directly interacting (posting content, messaging, etc.).					
6	I often encounter negative or heated exchanges on social media.					
7	I often do edit/remove posts on social media out of concern for how other users may react.					
8	I feel like other people's lives are more fulfilled than my own when browsing their social media.					
Scoring:						
8 to 16 = Low						
17 to 26 = Moderate						
27 and over = High						

(Peters, 2022a)

Hi, there...

Do you suffer from depression? Do you use social media?

Social media is one of the fastest growing, most frequently used forms of communication technology. Over half of the world's population uses social media, and nearly 80% of the US population accessed social media in 2021, with an average daily social media use of 2.5 hours per person. While social media has the potential to be beneficial to people in many ways, it can also have negative effects, as certain types of social media use have been linked to worsening symptoms of depression. The COVID-19 pandemic has led to a greater reliance on social media resulting from social distancing measures, further complicating issues between problematic social media use and depression, as users not only feel physically isolated but mentally isolated as well.

Here are some clues social media could be making your depression worse & tips for prevention through healthy social media use...

Alert Be mindful of your social media habits/behaviors.

- Is social media use disrupting healthy behaviors (sleep, homework, etc.)?
- How much time do you spend on social media or frequency checking social media?
- Are you preoccupied with thinking about social media or planning to use it?
- Do you feel troubled or restless if you are unable to use social media?
- Do you frequently edit or remove content for approval seeking through "likes" out of overconcern about the opinion/perception of other users?
- Do you use social media to forget about personal problems or out of boredom?
- Is your social media use "passive" (scrolling continuously through feeds, browsing without purpose) or "active" (directly messaging/interacting with other users, creating content)?

Aware Other factors to consider.

- Is there evidence of cyberbullying?
- Do you frequently encounter negative or heated user exchanges?
- Do you have a fear of missing out (FOMO) if you are unable to use social media?
- Do you have "Facebook envy"/jealousy (thinking the lives of other users are better than one's own based on displayed content)?
- Are you overly-affected by the lack of face-to-face interaction?

Adjust Actively improve your social media use.

- Limit the frequency and/or duration of your social media use.
- Delete or hide social media applications from your electronic devices.
- Practice mindfulness while using social media platforms.
- Maintain "active" social media use, instead of "passive."
- Turn off notification settings from social media applications.

(Peters, 2022b)

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