PRACTICE CHANGE: SOCIAL MEDIA USAGE SCREENING TO IDENTIFY HIGH RISK ADULT PSYCHIATRIC PATIENTS

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ABSTRACT

Cara Audrey Lutzow: Practice Change: Social Media Usage Screening to Identify High Risk Adult Psychiatric Patients
(Under the direction of Grace Hubbard)

Background: In today's culture, social media relationships are an integral part of adult socialization. According to research, 83% of persons between the ages of 18-33 have at least one social media account. As social media use has gained popularity, the effect of this type of socialization on psychiatric disorders needs to be considered by clinicians. Current evidence suggests high utilization of social media has been linked to increased psychiatric distress including higher depression, anxiety, and body dissatisfaction.

Purpose: The purpose of this practice change project was to assist psychiatric providers with identification of adult psychiatric patients who experience increased psychological distress from social media use.

Methods: The Plan-Do-Study-Act (PDSA) model was used to guide implementation of the Social Media Screening Questionnaire (SMSQ) as part of the initial psychiatric evaluation. Provider-participants administered the SMSQ to all new adult patients. At the end of each of the three PDSA cycles, provider-participants were asked to evaluate barriers and facilitators of the practice change. Upon completion of the PDSA cycles, participants completed a Qualtrics^{XM} final survey and a post-implementation debrief.

Results: Six psychiatric clinicians from a suburban psychiatric clinic participated in this practice change. All six providers completed the Qualtrics^{XM} final survey and participated in the post-implementation debrief. All participants either agreed or strongly agreed that utilization of

the SMSQ was helpful in identifying high utilizers of social media and stated they would recommend psychiatric providers continue to screen for social media use in the future. Of the 136 screenings administered, 113 were completed correctly (83%), 17 (12.5%) were discarded due to a no-show patient, and six (4%) were not completed during the visit.

Conclusion: The data from this practice change suggests screening for social media usage rates was effective in increasing providers awareness of the impact of social media on the patients' social environment and psychological state. It is recommended that psychiatric providers consider screening adult patients for social media use.

To my mother, Darlene, thank you for your unconditional love through my relentless pursuits of self-improvement.

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LIST OF ABBREVIATIONS

DNP	Doctor of Nursing Practice
IRB	Institutional Review Board
PDSA	Plan-Do-Study-Act
SM	Social Media
SMSQ	Social Media Screening Questionnaire

CHAPTER 1: INTRODUCTION

A potential problem exists with social media use in adult patients diagnosed with psychiatric illnesses. High utilization of social media applications has been linked to higher levels of psychiatric distress (Luxton et. al, 2012). A recent report indicated 83% of people between the ages of 18 and 33 have at least one social media account (Rosenthal et. al, 2016). Social media use has risen over the last decade and is now an influential part of many patients' social network. In an outpatient psychiatric clinic in suburban North Carolina, providers reported concern with patients displaying increased psychiatric symptoms with high social media usage. Symptoms included increased depression, anxiety, and lower self-esteem. Screening for social media use during the initial psychiatric evaluation can assist healthcare providers with customization of treatment plans.

The purpose of this practice change project was to increase psychiatric providers' awareness of the rate of social media usage in adult psychiatric patients. The primary outcome measures were inclusion of the Social Media Screening Questionnaire in the initial psychiatric evaluation and adherence rates to the practice change. Inclusion of the SMSQ in the initial psychiatric evaluation increased the provider's awareness of significant factors in the patient's social environment.

CHAPTER 2: REVIEW OF LITERATURE

Literature Search Strategy

Searches were completed on PubMed, CINAHL, and PsychInfo. The search on PubMed utilized the following MESH search: (((((("Social Media/utilization"[Mesh])) OR "Social Media"[Mesh] OR "social media use" OR "use of social media" OR Facebook use OR Instagram use OR Twitter use)) AND ("Surveys and Questionnaires"[Mesh] OR Surveys OR "Social Media Use Questionnaire" OR "Social Media Use Survey" OR "Facebook Use Survey" OR "Facebook Use Questionnaire")) AND ((("Mood Disorders"[Mesh]) OR "Depressive Disorder"[Mesh]) OR "Depression"[Mesh] OR Mood Disorder OR Mental Disorder) with inclusion criteria including adults 19+, last 5 years, human trials, clinical trials and reviews yielded 210 results. Of those 210 results, 5 articles were identified to review. Another MESH search was ((("Mood Disorders "[Mesh:NoExp] OR "mood disorders [tiab]")) AND ((((((("Social Media/utilization"[Mesh])) OR "Social Media"[Mesh] OR "social media use" OR "use of social media" OR Facebook use OR Instagram use OR Twitter use)))) with the same inclusion and exclusion criteria. Similar searches were completed on CINAHL and PsychInfo. Articles were also found with the assistance of a librarian and by looking through the reference list of articles found by the PubMed search. Forty-seven articles were reviewed based on search methods and 14 articles were synthesized for this review of literature.

Background

Social media includes websites and phone applications that allow users to create and share content with others. Current popular social media platforms include Facebook, Twitter,

Snapchat, and Instagram. New social media applications are regularly created and provide new forms of communication and self-expression (Hale, 2017). Social media has the capability for users to interact with a larger demographic of people from various geographic locations. This allows old friends to stay in contact despite moving and can be used develop new connections with strangers. Social media allows consumers to join different social and support groups to connect with others who have mutual interests and/or needs (Vannucci, et. al, 2016). Additionally, romantic and emotional relationships have developed between individuals who only communicate online. Social media has become a place for learning about current events, including local and worldwide news (Sagioglou & Greitemeyer, 2014).

Facebook was one of the first social media platforms to gain popularity and was founded by Mark Zuckerberg in 2004 at Harvard University (Hale, 2017). Facebook allows members to connect through writing messages, posting statuses and/or pictures on other peoples' pages. After Facebook's success, other social media platforms followed over the next decade with the two most popular social media platforms being Instagram and Snapchat. They allow users to communicate by posting photos (Hale, 2017). Social media use has increased over the last two decades. At the end of 2004, the popular social networking site Facebook had 1 million users and by 2019 increased to 2.38 billion users, of that 1.56 log into the application daily (Hutchinson, 2019). As of 2018, 68% of adults in the United States have a Facebook account, 78% of young adults (age 18-24) use Snapchat and 71% of young adults use Instagram (Hunt et. al, 2018).

The heightened popularity of social media has resulted in research assessing the impact usage has on people's wellbeing. Mental health professionals have voiced concern that social media use has a negative impact on patients diagnosed with psychiatric disorders. Facebook is the most common social media platform reviewed in the literature (Andreassen, 2012; Rosenthal et. al, 2016; Sagioglou & Greitemeyer, 2014; Sriwilali & Charoensukmongko, 2016; Tromholt,

2016) and has a valid and reliable scale to assess users for Facebook Addiction (Andreassen, 2012). The Berger Facebook Addiction Scale is used to identify individuals who have an addiction to Facebook (Andreassen, 2012) and has also been adapted to address all types of social media addiction (Sriwilali & Charoensukmongko, 2014). This study found having a social media addiction was associated with decreased mindfulness ($\beta = -.356$, $p < .0001$) and lower emotion-focused coping ($\beta = -0.297$, $p < .0001$) in 211 employees in Thailand (Sriwilali & Charoensukmongko, 2014).

Synthesis of Literature

Evidence in support of the need for social media screening in adult psychiatric patients exists in the literature. Of the fourteen articles reviewed, two were level I systematic reviews (Luxton et. al, 2012; Marchant et. al, 2017), three were level II randomized control trials (Hunt et. al, 2018; Sagioglou & Greitemeyer; Tromholt, 2016), five were level III questionnaire studies (Levenson et. al, 2017, Rosen et.al, 2013; Rosenthal et. al, 2016; Sriwilai & Charoensukmongko, 2015; Vannucci et. al, 2016), one was a level II two-part cross-sectional study and randomized control trial (Mabe et. al, 2014), one was a level III cross-sectional study (Carter et. al, 2017), one was the development of a rating scale (Andreassen, 2012), and one was a level III cluster analysis (Shensa et. al, 2018). Levels of evidence were categorized according to Greenhalgh's five levels of evidence system which is used to assess the quality of the article reviewed. Level I includes systematic reviews, level II randomized controlled trials, level III other controlled clinical trials, level IV observational studies, and level V case studies and clinical opinions (Greenhalgh, 2014).

Association between increased time on social media use and worsening psychiatric symptoms has been found (Levenson et. al, 2017, Rosen et.al, 2013; Rosenthal et. al, 2016; Sriwilai & Charoensukmongko, 2015; Vannucci et. al, 2016). The evidence suggests passive

social media use, scrolling without commenting, has a higher risk of psychiatric distress (Hunt et. al, 2018; Sagioglou & Greitemeyer, 2014). High social media use was associated with higher body dissatisfaction (Carter et. al, 2017; Mabe et. al 2014), increased sleep disturbance (Levenson, 2017) and depressive symptoms (Rosen et. al, 2013; Rosenthal et. al, 2016; Sagioglou et. al, 2014; Shensa et. al, 2018; Sriwilai & Charoensukmongkol, 2016; Vannucci et.al, 2017). Social media was found to be independently associated with increased depression when compared with general internet use. In one randomized control trial, positive mood was negatively correlated with the time active on Facebook ($r=-.24$ $p=.007$), whereas internet use was not significantly correlated with mood changes($r=-.0.26$ $p= .778$) (Sagioglou et. al, 2014).

Negative experiences on social media including cyberbullying and rude comments negatively impacted mood in young adults. In a sample of 264 young adults, all negative FB experiences were associated with depressive symptoms (p: <.05 CI: 95%) (Rosenthal et. al, 2016). Along with negative experiences, increased time on social media was positively correlated with higher symptoms of anxiety and depression (Rosen, et al, 2013; Shensa et al, 2018; & Vannucci et. al, 2017). A potential limitation of these studies is reliance on self-reported symptoms of anxiety and depression and self-reported time on social media (Rosen, et al, 2013; Shensa et al, 2018; & Vannucci et. al , 2017).

Social media use prior to bedtime has been associated with increased sleep disturbances. Compared to those who did not use social media before bed, those who used social media thirty minutes before bed had a higher sleep disturbance. There was a linear trend between SM use before bed and reported sleep disturbance ($p=.001$) (Levenson et. al, 2017). The limitation of this study was the researchers did not specifically examine if using social media before bed caused sleep impairment (Levenson et. al, 2017). Further research is needed to determine a causal relationship between sleep impairment and late-night social media use.

The two systematic reviews looked at the relationship between social media use and suicide (Luxton et. al, 2012; Marchant et. al, 2017). Both found that higher utilization of social media was associated with increased suicidal ideations (Luxton et. al, 2012; Marchant et. al, 2017). Four studies reviewed looked at the relationship with social media use and suicidal behaviors, three found young adults presenting to emergency departments for suicidal behaviors had higher use of social media use, the other article found suicidal comments posted on Twitter was related to suicidal ideations or behavior. The limitation was the quality of the article appraisal. Three of the four articles included in the systematic review had low or medium quality evidence regarding social media use and self-harm (Marchant et.al, 2017). This is likely due to the ethical constraints of creating randomized control trials related to social media use and suicide.

The three randomized control trials in 1501 young adults (ages 18-35) used controlled time on social media to evaluate the effect on mood. Specific results of these studies indicated positive mood was negatively correlated with time spent on Facebook ($p=.007$) (Tromholt, 2016), social media use versus "general internet use" caused higher levels of negative emotions (Sagioglou et al., 2014), and limiting social media use to 30 minutes daily for three weeks was associated with a reduction of depressive symptoms from moderate-high depression to no depression using the Beck's depression scale for self-reporting symptoms (Hunt et. al, 2018). Limitations of these studies included small sample sizes and brief data collection periods. However, this data suggests that high utilizers of social media may benefit from abstaining or minimizing time on social media. While this demonstrated a positive increase in general affect when removing social media, it is unclear that this would be sustained past one week. It may also be unrealistic to recommend people completely abstain from social media use.

The biggest limitation in the literature was the lack of systematic reviews and randomized control trials. Most of the evidence came from cross-sectional and cohort studies and relied on self-reported symptoms, which affect the credibility of the evidence. Also, the majority of evidence included in this review focused on utilization of Facebook and cannot be generalized to all types of social media use. In several of the reviews, the evidence appraised was low or medium quality. There also was a lack of evidence specifically addressing social media use in patients diagnosed with psychiatric illness.

Summary

Social media use rates continue to rise and contribute to people's social network. The evidence supports an association between higher utilization and increased psychiatric distress (Rosenthal et. al, 2016; Sagioglou & Greitemeyer, 2014; Sriwilali & Charoensukmongko, 2016; Tromholt, 2016). There needs to be higher quality research regarding social media use and its effect on mood disorders and research on platforms other than Facebook. Additional research evaluating the effects of limiting social media use in patients with psychiatric symptoms would also be helpful. More research would allow clinicians to provide evidence-based recommendations to patients for safe practice of social media use. Recommendation of abstinence from social media use may not be a realistic option for many people who utilize these sites to keep in contact with friends and family. Psychiatric providers need to be actively screening patients to identify and assess patients at risk for social media addiction or psychiatric distress resulting from current levels social media use.

CHAPTER 3: CONCEPTUAL MODEL

The conceptual framework that guided the practice change was Plan-Do-Study-Act or PDSA. PDSA was created by W. Edward Deming (Deming, 1993), a statistician and professor and originated as a scientific model utilized in industrial improvement (Moen & Norman, 2017). Plan-Do-Study-Act is a cyclical quality improvement framework used to produce rapid and effective change. PDSA was used to develop the Japanese economy post-war in the 1950s and has been adopted by other fields for continuous quality improvement projects (Moen & Norman, 2017). More recently, PDSA has been used in healthcare quality improvement initiatives because it provides stakeholders prompt feedback (success or failure) regarding the change in a cost-effective and less disruptive way to staff and patients (Institute for Healthcare Improvement [IHI], 2018).

The four-step cycle for problem solving includes *planning* (identification of the problem and creation of a hypothesis about the cause and solution), *doing* (small scale implementation), *studying* (evaluation of the results), and *acting* (standardization or revision) (Moen & Norman, 2017). The end of one PDSA cycle is the beginning of another on a slightly larger scale (IHI, 2018). The three key questions asked during the planning phase to guide the hypothesis are: what are we trying to accomplish, how will we know that a change is an improvement, and what changes can we make that will result in an improvement? (Minnesota Department of Health, 2018). The purpose of these three questions is to define the aim of the quality improvement initiative and how the success of the project will be identified.

The intention of this practice change was to increase provider awareness of the rate of social media usage by their patients. The providers' increased awareness of the impact of social media usage would enable customized treatment planning, when a need was indicated. If the PDSA cycles reflected improved quality of patient care, the screening tool would be integrated in the EHR as a permanent part of the initial psychiatric evaluation; thereby establishing the success of the practice change. PDSA was chosen as the appropriate theoretical framework for this practice change because it is practical and cost-effective in a fast-paced, productivity driven clinical setting. Creation of rapid, small-scale change increases the likelihood of successful implementation and sustainability of the initiative. The small, incremental changes with the PDSA method allow for a snowballing effect that increases numbers of participants with each subsequent PDSA cycle. The final goal is a sustained, long-term change (Moen & Norman, 2017).

CHAPTER 4: PROJECT DESIGN

A practice change design was used for this Doctor of Nursing Practice project. The purpose of a practice change is to integrate evidence-based research with current clinical practice to improve the quality and safety of patient outcomes and create lasting and sustainable improvements to practice. A key feature for change projects is assessment of current practice guidelines and areas of resistance prior to the start of an implementation (Titler, 2008). Potential barriers identified for this project included lack of buy-in and provider workload. A practice change design effectively increased comprehensiveness of assessment domains and increased the providers' awareness of social media usage, thereby improving the ability to customize treatment interventions when indicated.

The PDSA framework guided implementation of four cycles with rapid and small changes over a seven-week period. Quantitative and qualitative date were collected with a focus on barriers to, facilitators for and providers' feedback about the process.

CHAPTER 5: METHODS

The Social Media Usage Screening Questionnaire (SMSQ) was administered by provider-participants to adult patients 18 years and older during the initial psychiatric evaluation. The five-question SMSQ was developed by the Project Lead based on evidence related to social media use (Appendix 1). The PDSA design guided implementation of the SMSQ to maximize efficiency of time and response-type to minimize workload burden for the provider-participants. The format was large, quick-read font and multiple-choice answers circled by the provider-participants. An open text box was available for optional feedback by the patient or provider-participant during the screening. Administration time of the SMSQ was one-to-three minutes depending on the responses. At the conclusion of the four PDSA cycles, provider-participants completed a Qualtrics^{XM} (2019) survey and participated in a post-implementation evaluation meeting led by the Project Lead. Qualtrics^{XM} is a management platform that can be used by universities or businesses to gather and analyze data. In this project, it was used to gather data about demographics of provider-participants and to assess the usefulness of the addition of the SMSQ.

Setting and resources

The setting of this project was an outpatient psychiatric clinic in suburban North Carolina with nine mental health providers. The site location was a part of a larger organization with multiple specialty psychiatric clinic locations. Each provider works independently to provide care for patients diagnosed with psychiatric illnesses. This office serves patients from early

childhood to end of life; however, the majority of providers treat patients aged 18-65. The payer mix for this site is predominantly fee-for-service and commercial insurance.

Project participants

Six mental health providers participated in the practice change: one psychiatrist, four nurse practitioners and one physician assistant.

Recruitment

Recruitment for participation in this practice change occurred during a scheduled 30-minute lunch meeting. Two providers were excluded from participating due medical leave during implementation dates and one was excluded due to changing role within the setting (Appendix 2).

Key stakeholders

Implementation of a successful practice change project requires buy-in from support staff, administration, and providers. The chief medical officer of the company was a key stakeholder and champion for this initiative, demonstrating enthusiasm and actively advocating for the practice change. Senior providers were champions of the implementation and willingly participated to create a higher buy-in from more hesitant providers. The office culture is highly collaborative, which increased compliance with the practice change.

Ethics and Human subject's permission

Approval of this project was received from the University of North Carolina at Chapel Hill Institutional Review Board (IRB Number 19-1172).

Data Collection

Data collection points were at the end of each of the four PDSA cycles, and at the conclusion of the implementation. Quantitative data were collected through a Qualtrics^{XM} survey and through daily SMSQ collection and consisted of participant demographics, adherence rate,

and evaluation of the helpfulness of the project (Appendix 3). Qualitative data were collected during PDSA cycle-end feedback meetings and a post-implementation discussion and consisted of provider-participants' perspectives of the overall practice change of including the social media usage screening during the initial psychiatric evaluation (Appendices 4&5).

The number of SMSQ's to be distributed daily to provider-participants was determined by the Project Lead based on number of initial psychiatric evaluations to be completed by each provider-participant. The Project Lead collected and accounted for all distributed SMSQs at the end of each day and reviewed usage according to planned procedures. The data were stored in a Microsoft® Excel spreadsheet for total adherence rates to be determined.

Procedures for Project Implementation

Prior to implementation, the Project Lead invited potential provider-participants to a recruitment and education luncheon. Background information about the project was provided, participation was requested, and procedural instructions were given. The provider-participants were given written materials including: the Information Form (Appendix 6), a step-by-step procedural instruction sheet (Appendix 7), and the Social Media Screening Questionnaire (Appendix 1). The recruitment and education session lasted 30 minutes and taught providers the correct use the SMSQ, the purpose of the PDSA cycles, and explain the process for the implementation of the SMSQ. Administrative staff were trained on the process of the implementation and their role was explained.

Daily, the Project Lead supplied each provider-participant with the correct number of SMSQ's based on the number of initial evaluations scheduled for that business day. The questionnaires were attached to each provider-participant's daily schedule to improve ease of workflow and improve compliance with utilization of the SMSQ. Provider-participants returned completed SMSQ to front office staff who scanned the document into the patient's chart and then

put the completed coded survey in a designated folder for the Project Lead. The inclusion of completed SMSQ documents in the electronic health record allowed provider-participants to have access to the data for treatment planning. If a patient did not arrive for his or her appointment, the provider-participant wrote "NO-SHOW" on the questionnaire and put the unused questionnaire in the designated folder for the Project Lead. (Appendix 8).

Each SMSQ was numbered to identify the provider-participant who completed the questionnaire. This facilitated tracking of each questionnaire while providing anonymity for the patient associated with it. The Project Lead held the master copy of numbers assigned for each provider-participant. Each provider's code started with their designated number and the number of surveys they had completed. For example, provider-participant #1 had numbers 100-199; provider-participant #2 had numbers 200-299, etc. through 600-699 for provider-participant #6 (Appendix 9). No provider completed more than 100 surveys, which was expected.

Figure 1: Table of Cycling

Cycle	Week	Provider-Participants	# of intakes
Cycle 1	Week 1 – June 3rd-7th	1	3
Cycle 2	Week 2 – June 10-14th	1,2,3	16
Cycle 3	Weeks 3&4 – June 17th-28th	1,2,3,4,5,6	46
Cycle 4	Weeks 5,6,7 July 1-19th	1,2,3,4,5,6	49
Total	7 weeks	6 providers	114

Implementation occurred during a period of seven weeks and consisted of four PDSA cycles. Planned opportunities for providers to give feedback were included at the end of each cycle.

The first PDSA cycle (one week) included one provider-participant who implemented the SMSQ during all initial evaluations. Number of provider-participants increased with cycles two and three, and timeframe increased with cycles three and four (see figure 1). Feedback was obtained after each cycle **(**Appendix 4). The feedback meetings were structured to enable discussion of facilitators and barriers and to promote provider-participant discussion of their experience using the SMSQ. No changes were suggested during any of the feedback meetings.

The post-implementation evaluation was led by the Project Lead during a specific lunchtime meeting called for this purpose. All six provider-participants attended the 30-minute post-implementation discussion. The Project Lead guided the discussion with specific questions and allowed participants to share anecdotal experiences (Appendix 5). Provider-participants were emailed the Qualtrics^{XM} link after the meeting and were given five days to respond. All six provider-participants completed the Qualtrics^{XM} survey.

Data Analysis

Quantitative and qualitative data were analyzed for evaluation of primary and secondary outcomes and to evaluate the effectiveness and sustainability of the practice change. Quantitative data gathered daily and from the Qualtrics^{XM} survey were used to assess the primary outcomes of demographics, number of completed surveys, adherence, and helpfulness of the surveys. Qualitative analysis of data from PDSA cycle-end questions and post-implementation evaluation discussion was used to identify secondary outcomes and emerging themes from the project.

CHAPTER 6: RESULTS

Demographics

Six psychiatric providers consented to participate in the practice change. All six provider-participants completed the seven-week implementation, participated in the post-implementation evaluation discussion, and Qualtrics^{XM} survey. Provider-participants ranged in age from 25-62 and with one to 25 years of experience working in a psychiatric setting. Four provider-participants were nurse practitioners, one was a physician assistant, and one was a psychiatrist.

Primary Outcomes

The primary outcomes were defined prior to implementation and were used to benchmark the success of the implementation.

Adherence to the Social Media Screening Questionnaire

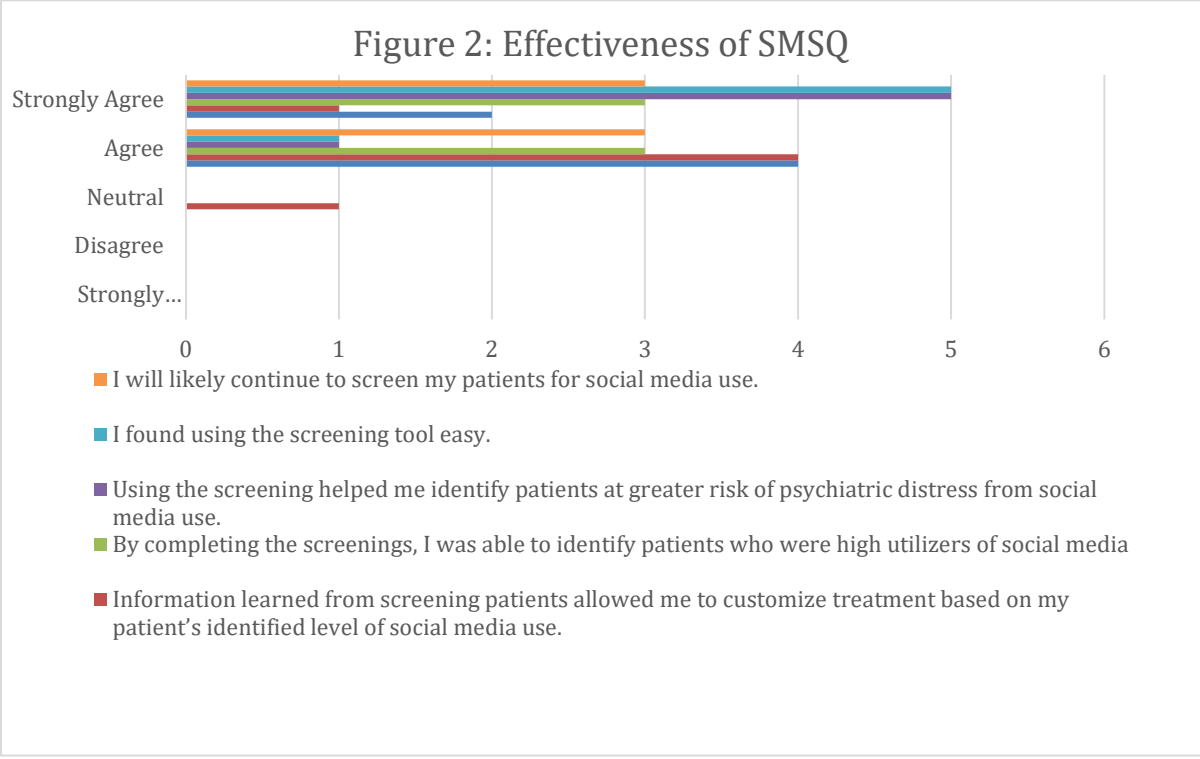
One hundred thirty-six SMSQs were administered during the seven-week implementation. Of the 136 screenings, 113 were completed correctly (83%), 17 (12.5%) were thrown out due to a no-show patient, and six (4%) initial patients during the project were not screened. SMSQ adherence rates were: three provider participants completed SMSQ screenings on 100% of initial evaluations, one provider completed SMSQ screenings on 86% (18/21) of initial evaluations, one provider completed SMSQ screenings on 85% (11/13) of initial evaluations, and one provider completed SMSQ screenings on 75% (3/4) of initial evaluations.

Although all screenings appeared correctly filled out, during the Qualtrics^{XM} survey, one provider-participant reported they followed screening protocol 25-50% of the time. This provider-participant incorporated the questions in a more organic conversation instead of asking

them as a screening questionnaire. For example, this provider-participant may have asked "tell me about your social media use" and used answers to fill out the screening questionnaire. Despite the procedural instructions not being followed, the outcome was a correctly completed SMSQ and it would be hard to distinguish which SMSQ's were completed this way to specify in the data. The other five provider-participants reported asking the screening questions as written 100% of the time. All surveys were reported to take less than three minutes and at least one third taking less than one minute.

Effectiveness of the SMSQ

Statements seven through thirteen on the Qualtrics[XM] Survey asked provider-participants to rate the effectiveness and impact of the intervention on current practice using a Likert scale (strongly disagree-strongly agree). Statements assessed ease of use, effectiveness of identifying



high utilizers of social media, value customizing treatment plans, and the likelihood of continued use of social media screening (Figure 2).

Unanimously the provider-participants believed the SMSQ was easy to use and effective in identification of patients who were high utilizers of social media. The majority of providers-participants (67%) believed the SMSQ helped customize treatment plans for their patients and five (83%) felt they will likely continue to screen for social media use on future patients. Three of the six provider participants (50%) stated information learned from the SMSQ changed their treatment interventions, while the other half stated the SMSQ did not have a significant impact on treatment planning. Further, post-implementation discussion revealed the type of patient response to the SMSQ impacted whether treatment planning was influenced. For example, if a patient response was "no" to social media use, there was no indication to alter treatment plans.

Secondary Outcomes

Secondary outcomes were evaluated through PDSA cycle-end questions and the post-implementation discussion to further explore the provider-participants' perception of the results of the practice change and to discuss barriers to and facilitators of the practice change.

PDSA Cycle-End Questions

The purpose of the PDSA Cycle-End Questions was to identify barriers to implementation and to discuss possible solutions to improve the implementation procedure in real time. Discussion with provider-participants revealed they experienced no barriers to implementation; therefore, no changes in the practice change process were indicated.

Post-implementation Discussion

The Post-Implementation Discussion focused on the practice change process in its entirety including the overall results (adherence rates, effectiveness of SMSQ) and barriers, facilitators, and unexpected outcomes identified during implementation. The discussion revealed no barriers occurred in the process of implementing the SMSQ as part of the initial psychiatric evaluation. Overall, provider-participants agreed the procedure for implementation was

sustainable and facilitated effective practice change. One provider-participant identified an inability to implement the SMSQ on one occasion due to a patient's late arrival. Due to decreased amount of time available for the initial evaluation the provider-participant prioritized assessment data and did not include the SMSQ. All provider-participants reported no change in productivity rates with the addition of the SMSQ, emphasizing the helpfulness and efficiency of the easy-to-use format facilitated compliance. Incorporation the SMSQ in the initial evaluation template in the electronic health record rather than the paper questionnaire was suggested as a strategy to further improve ease-of-use.

Emerging Themes

Throughout implementation provider-participant comments were documented during end-of-cycle feedback meetings and the post-implementation discussion. The comment section on the SMSQ also yielded additional information. Three themes emerged by the end of the seven-week implementation.

Theme One was *patients regulate social media use*. Provider-participants realized many of their patients demonstrated the ability to recognize the impact of social media use and regulate their own use accordingly. Patients regulated their social media use with previously set limits, ranging from total removal of social media interaction to allowing certain time frames for use. Patients commented to their providers, "that [social media use] makes me sad" or "there is too much negativity on social media". Many of the patients who were not current users of social media mentioned they discontinued because of its influence on their mood and quality of life.

Theme Two was *social media screening increases awareness*. Both provider-participants and patients realized the actual screening process (inclusion of the SMSQ in the initial evaluation) not only defined social media use, it also raised awareness of the overall impact of social media use on the patient's emotional state. As an outcome of responding to the SMSQ,

many patients stated they had never reflected on their social media use and stated the screening questions made them aware their social media use was impacting them negatively. One patient stated, “I have never reflected on how it [social media] affects my mood, but it definitely bums me out”. The awareness gained for provider-participants and patients helped improve healthier use of social media for these patients.

Theme Three, the final theme, was *multiple platform usage by adults ages 18-40*. A question on the SMSQ asked patients how many different types of social media they used. It was frequently reported by provider-participants that patients under 40 were most often using numerous social media applications. The frequency of multiple platforms suggested to provider-participants the importance of ongoing screening and discussion related to social media use might be significant for this demographic. While some over-forty patients spent multiple hours daily on social media, their predominant activity occurred on a single platform and largely consisted of viewing pictures of family and friends.

CHAPTER 7: DISCUSSION

The outcomes of the practice change at this local psychiatric outpatient setting support the effectiveness of including the SMSQ during an initial psychiatric assessment. The end users (provider-participants) indicated a high likelihood of adopting a social media screening tool as standard practice on all initial psychiatric evaluations, with the additional consideration for ongoing evaluations with multi-platform users. The data supported the significance of ease-of-use and efficient formatting to minimize or prevent disruption of productivity requirements. The process of screening for social media use was revealed to promote important conversations about the patients' wellbeing.

Data obtained from the SMSQ supported the evidence higher use of social media (3+ hours) was correlated with increased psychiatric distress (Rosenthal et. al, 2016; Sagioglou & Greitemeyer, 2014; Sriwilali & Charoensukmongko, 2016; Tromholt, 2016). The SMSQ specifically focused on the negative impact on mood and anxiety specific symptoms, which was the primary focus of the literature. This suggests that the most impacted psychiatric disorders from high social media utilization would be mood spectrum and anxiety related disorders.

Many patients identified that limiting time or totally abstaining from social media use positively impacted their mental health, a behavior supported by the literature in which less than thirty minutes usage or abstinence was associated with a reduction of depressive symptoms (Hunt et. al, 2018). Setting time limits or decreasing frequency of social media use may be an effective recommendation for some patients. Again, the largest group positively impacted by

reducing time spent on social media were those with the highest utilization rates (Hunt et. al, 2018).

College students and young adults are the largest population represented in the research conducted to date (Carter et. al, 2017; Rosenthal et al; 2016; Shensa, 2018;Tromholt, 2016). The data from the SMSQ was consistent with a higher risk factor for a younger demographic (ages 18-40); therefore, screening this population may be the priority.

Based on the literature and feedback from the provider-participants, online social networking as a component of a person's social support deserves more consideration during a psychiatric evaluation. Psychiatric providers should evaluate social media use; and when warranted, they should develop treatment plans that incorporate a realistic plan for safe social media use. Provisional recommendations include limiting usage to under three hours daily and encouraging patients to use social media to actively engage with others instead of passively scrolling through their social media feeds (Rosenthal et. al, 2016; Sagioglou & Greitemeyer, 2014; Sriwilali & Charoensukmongko, 2016; Tromholt, 2016).

Strengths

Strengths of this practice change included use of PDSA cycles, stakeholder investment, ease-of-use of the screening tool, and scheduled feedback meetings. The use of PDSA cycles allowed prompt feedback and promoted discussion, which was vital for the success of this practice change in a fast-paced, productivity-focused setting. Social media screening is progressive and innovative in the field of psychiatry, which will hopefully inspire other similar practice change projects. The inclusion of social media screening questions into psychiatric practice can provide new and valuable insight into patients' current social environments. The SMSQ demonstrates an efficient and effective approach to screening and encourages participation from the psychiatric providers. Patient feedback regarding their reflections about

their social medial use suggests the SMSQ improves quality of patient care and potentially increases patient safety.

Limitations

No evidence was identified in the literature for use of a social media screening during psychiatric evaluations, and as a result, no evidence-based protocols for social media screening during the initial psychiatric evaluation have been developed. Paper surveys created additional workload for administrative staff and were a limitation of the practice change.

Sustainability

Sustainability of the SMSQ use would improve with integration of the screening questions into the electronic health record initial evaluation template. Inclusion of data from this tool combined with other initial assessment data can provide information to more adequately identify patient care priorities. Inclusion of this information in the electronic health record can make this data universally accessible over the course of treatment for all providers involved in the patient's care. Overall, this tool can help to improve the quality of patient care, through the enhancement of comprehensive assessment and evaluation of psychiatric patients.

CHAPTER 8: RECOMMENDATIONS

Key recommendations were identified as a result of the data obtained from this practice change. Expansion of implementation of the existing SMSQ to other psychiatric practices would be beneficial in furthering the assessment of this practice change. This is a feasible goal, given the numerous clinics associated with the partnering practice in this project. Based on the dissemination of findings from this project, the SMSQ could be available for practices across the region and nation to expand their formal assessment of social media use. Inclusion of the screening questions in the initial evaluation before the practice change could be considered by the clinical site. PDSA cycles are strongly recommended during the implementation to ensure prompt evaluation and promote feedback about potential barriers. Future projects could focus on a smaller demographic of patients whose ages range from 18-40 years of age, as the evidence suggests this is the most impacted group. Additionally, a focused implementation assessing pediatric patients might yield clinically significant data to influence treatment planning.

Social media use has been a trending topic among the professional psychiatric community, and there is still room for further research to develop specific clinical guidelines for patients. Future randomized control trials comparing specific time limits and abstinence from social media and evaluating the outcome on psychiatric distress will give clinicians the ability to create specific recommendations for patients. Despite limitations in current guidelines, screening patients during their initial visits is a low-risk and effective way for clinicians to increase awareness around that specific patient's issues with social media use.

APPENDIX 1: SOCIAL MEDIA SCREENING QUESTIONAIRE

1. Do you use social media?

   YES NO

2. How many hours daily do you spend using social media?

   0-1 1-2 2-3 3+

3. How many different types of social media do you regularly use? 0-1

   1-2 2-3 3+

Circle: Instagram Facebook Twitter Snapchat

Other_____

4. Do you feel using social media causes you to experience emotional distress?

   Yes No Neutral

5. Can you identify the type of emotional distress you experience?

Increased anxiety Increased depression

Lower self- esteem Increased anger

Other _____

Comments:

APPENDIX 2: RECRUITMENT INFORMATION

I invite you to partake in this Social Media Screening Questionnaire quality improvement project. This project is designed to evaluate the implementation of five social media screening questions into the initial evaluation of adult psychiatric patients and the impact it has on customization of the treatment plan. 83% of people between the ages of 18-33 have at least one social media account. The literature suggests high utilization of social media has been linked to increased psychiatric distress including higher depression, anxiety, and body dissatisfaction. To be eligible to participate you must be providing psychiatric care to adult patients (18 and above). To participate in this quality improvement project, we ask that you use the Social Media Screening Questionnaire during every initial evaluation on an adult psychiatric patient. The questionnaire is expected to take one to three minutes to complete depending on your patient's answers. Training in the use of the Social Media Screening Questionnaire and the procedure of implementation will be provided at a lunch and learn meeting for participants between May 22-31st. This project will span from June 3rd-July 19th, 2019; however, your participation may not be required until a later date than June 3rd. Providers will be added over the course of the project, beginning with one provider and ending with all provider participants. After each cycle, you will be asked three questions to provide feedback on the process and ease of use of the questionnaire. After completion of the practice change project, you will be asked to participate in a brief anonymous survey (less than 15 minutes to complete) and attend a post-implementation provider group meeting (less than 30 minutes) to provide feedback about barriers to and facilitators of inclusion of the social media usage screening questions into the initial psychiatric intake.

APPENDIX 3: QUALTRICS^{XM} POST-EVALUATION SURVEY

1) What type of provider are you?
a. Nurse Practitioner
b. Physician assistant
c. Psychiatrist
2) What is your gender?
a. Male
b. Female
3) What is your age range?
a. 20-30 years
b. 31-40 years
c. 41-50 years
d. 51-60 years
e. 61+ years
4) How many years have you practiced medicine?
a. 0-5 years
b. 6-10 years
c. 11-15 years
d. 15+ years
5) Approximately what percentage of initial evaluations, did you complete social media screenings on?
a. 0-25%
b. 25-50%
c. 50-75%
d. 75%+
e. 100%
6) Approximately how often did you ask questions as they were written on form?
a. 0-25%
b. 25-50%
c. 50-75%
d. 75%+
e. 100%
7) How long did each screening take you to complete?
a. Less than 1 minute
b. 1-3 minutes
c. 3-5 minutes
d. 5+ minutes

Please indicate the degree to which you agree with each statement:
Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree (Likert Scale 1-5)
8) Using the social media screening provided me with important information about my patients
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree
9) Information learned from screening patients changed my treatment plan
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree

10) Information learned from screening patients allowed me to customize treatment based on patient's identified level of social media use

1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree
11) Utilization of the screening, helped me identify patients who are high utilizers of social media
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree
12) Using the screening helped me identify patients at greater risk of psychiatric distress from social media use.
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree
13) Using the screening tool was easy
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree
14) I will likely continue to screen for social media use in my patients
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree
15) I would recommend other psychiatric providers screen for social media use in patients
1= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree

APPENDIX 4: PROVIDER-PARTICIPANT PSDA CYCLE-END QUESTIONS

1. How did the addition of the social media usage screening influence your initial evaluation?
2. Do you have any recommended changes to the process?
3. Did the addition of the 5 social media screening questions create any barriers for you in your practice?

APPENDIX 5: Provider POST-Implementation EVALUATION QUESTIONS

1. How did the addition of the Social Media Screening Questionnaire impact your productivity?
2. What worked well about the process design?
3. What barriers did you feel for implementing screening questionnaire?
4. How did using the screening alter your clinical knowledge about social media use?

APPENDIX 6: INFORMATION FORM

You are being asked to participate in a quality improvement project conducted by Cara Lutzow

Purpose: To evaluate the effectiveness of the implementation of the Social Media Screening Questionnaire on adult psychiatric patients during initial evaluation.

Procedure: To participate in this quality improvement project, we ask that you use the Social Media Screening Questionnaire during every initial evaluation on an adult psychiatric patient. The questionnaire is expected to take one to three minutes to complete depending on your patient's answers. Please see **Procedure Instructions** for more information on implementation of the screening questionnaire. Your participation dates may vary depending on your assigned participant number. Throughout the project, you will be asked three questions to provide feedback on the process and ease of use of the survey (less than 5 minutes to complete). After completion of the project, you will be asked to participate in a brief anonymous survey (less than 15 minutes to complete) and attend a post-implementation provider group meeting (less than 30 minutes) to provide feedback about barriers to and facilitators of the program.

Voluntary participation: Participation in this project is voluntary. Should you choose to participate, you can stop participating at any time.

Risks and benefits: This project pose minimal risk to participants.
The benefits associated with this project are possible improvement in treatment of your current patient population and overall patient satisfaction

If you have any questions or want more information regarding this project, you may contact the Project Lead at cara.lutzow@email.unc.edu.

Confidentiality: Your participation and responses to the Qualtrics survey questions will be anonymous and confidential. Please do not disclose identifying information on the survey. All patient information used for the Social Media Screening Questionnaire will be confidential and only accessible to the provider treating that patient. Data collected through mid-project questions and through the post-implementation evaluation will be anonymous and used only for identifying common themes.

Please retain a copy of this information form for your records.

APPENDIX 7: PROCEDURE INSTRUCTIONS

Project Procedure: Each day the Project Lead will attach the appropriate quantity of Social Media Screening Questionnaires (SMSQ) to your patient schedule list. Example: If you have two initials scheduled that day, two SMSQ will be attached to your patient list. A number is recorded in the corner of each survey for the Project Lead to keep track of surveys for each participating provider. Turn in the completed SMSQ with the appropriate patient's charge slip to front office staff. Front office staff will scan SMSQ into the appropriate patient's chart, so it is available for you to review responses at any time. The completed questionnaire will be put into the designated folder for the Project Lead by the front office staff. If you have an initial evaluation scheduled and the patient does not show for the appointment, please turn in the blank questionnaire with "NO SHOW" written on it to front office staff so they can return it to Project Lead. Please do not throw away unused SMSQ for no-show patients as this will throw off outcome measurements.

Directions for using SMSQ:

1. Implement screening during initial evaluation. Recommended time is after taking a Social History for interview continuity; however anytime during the evaluation is acceptable.
2. Ask questions in numerical order from 1-5.
3. Ask questions as they are written for project integrity.
4. Circle appropriate responses for each question on SMSQ.
5. If patient answers "No" to Question 1, no further questions are required.
6. If patient answers "No" to Question 4, do not ask Question 5.

APPENDIX 8: PROCEDURAL STEPS

Steps	Responsibility
Provided questionnaires daily to participants	Project Lead
Completion of questionnaires during initial evaluation	Provider-participant
Turned in completed questionnaires to front office staff	Provider-participant
Returned uncompleted surveys for no-shows back to Project Lead	Provider-participant
Scanned questionnaires into appropriate charts	Front office staff
Returned completed questionnaires to Project Lead	Front office staff
Collected data from PDSA questions and Post-implementation group	Project Lead

APPENDIX 9: PROVIDER-PARTICIPANT CODING SYSTEM

Provider #1	100-199*
Provider #2	200-299
Provider #3	300-399
Provider #4	400-499
Provider #5	500-599
Provider #6	600-699
Provider #7	700-799
Provider #8	800-899
Provider #9	900-999

*****Less than 99 initials were used by each provider during project, if more were required labels would have begun with provider number and hyphenate with numbers larger than 100. Example: Provider 1 additional numbers would be 1-100, 1-102, etc.

REFERENCES

Act Academy (2018) Plan, Do, Study, Act cycles and the model for improvement. *NHS Improvement.* https://improvement.nhs.uk/documents/2142/plan-do-study-act.pdf

Andreassen, C. (2012). Development of a Facebook addiction scale. *Psychological Reports 110*(2), 501-517. doi 10.2466/02.09.18.PR0.110.2.501-517

Carter, A., Forrest J.L., Kaida, A. (2017). Association between internet use and body among young females: cross-sectional analysis of the Canadian community health. *J Med Internet Res. (19)*2: e39. doi. 10.2196/jmir.5636

Deming, W.E. (1993). *The New Economics*. Cambridge, MA: MIT Press.

Greenhalgh, T. (2014). *How to read a paper: the basics of evidence-based medicine 5th ed.* London, UK: Wiley.

Hale, B. (2017). The history of social media use. Retrieved from https://historycooperative.org/the-history-of-social-media/

Hunt, M., Marx, R., Lipson, C., & Young, J. (2018). No more FOMO: Limiting social media decreases loneliness and depression. *Journal of Social and Clinical Psychology (37)*10, 751-768. Retrieved from https://guilfordjournals.com/doi/pdf/10.1521/jscp.2018.37.10.751

Hutchinson, Andrew (2019). Facebook reaches 2.38 billion users, beats revenue estimates in latest update. Retrieved from https://www.socialmediatoday.com/news/facebook-reaches-238-billion-users-beats-revenue-estimates-in-latest-upda/553403/

Institute for Healthcare improvement (2018). Model for improvement: Plan-Do-Study-Act (PDSA) Cycles. Retrieved from http://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementTestingChanges.aspx

Kotter, J. (1995*). Leading change: Why transformation efforts fail.* HBS 95204. Boston, MA: Harvard Business School Publishing.

Levenson, J.C., Shensa, A., Sidani, J.E., Colditz, J.B., Primack, B.A. (2017). Social media use before bed and sleep disturbance among young adults in the United States: A nationally representative study. *Sleep 40*(9). doi. 10.1093/sleep/zsx113

Luxton, D. D., June, J. D., & Fairall, J. M. (2012). Social media and suicide: A public health perspective. *American Journal of Public Health*, *102*(Suppl 2), S195–S200. doi 10.2105AJPH.2011.300608

Mabe, AG, Forney, K.J., Keel, P.K. (2014). Do you "like" my photo. Facebook use maintains eating disorder risk. *Eating Disorders 47*(5), 516-523. doi:10.1002/eat.222254

Marchant, A., Hawton, K., Stewart, A., Montgomery, P., Singaravelu, V., Lloyd, K., Purdy, N., Daine, K., John, Al. (2017). A systematic review of the relationship between internet use, self-harm, and suicidal behavior in young people: the good, the bad, and the unknown. *PLoS One 12*(8). doi. 10.1371/journal.pone.0181722

Minnesota Department of Health (2018). PDSA: Plan Do Study Act. Retrieved from http://www.health.state.mn.us/divs/opi/qi/toolbox/pdsa.html

Moen, R. & Norman, C. (2017) Circling Back: clearing up the myths about the Deming cycle and seeing how it keeps evolving. Retrieved from http://www.apiweb.org/circling-back.pdf

Qualtrics. (2019) (Version 06-08, 2019). Provo, Utah, USA. Retrieved from http://www.qualtrics.com

Rosen, L.D., Whaling, K., Rhab, S., Carrier, L.M., & Cheever, N.A. (2013). Is Facebook creating "iDisorders"? The link between clinical symptoms of psychiatric disorders and technology use, attitudes, and anxiety. *Elsevier 29,* 1243-1253. doi 10.1016/j.chb.2012.11.012

Rosenthal, S.R., Buka, S.L., Marshall, B.D., Carey, K.B., Clark, M.A. (2016). Negative experiences on Facebook and depressive symptoms among young adults. *Journal adolescent health (59)*(5), 510-516. doi. 10.1016/j.jadohealth.2016.06.023

Sagioglou, C. & Greitemeyer, T. (2014). Facebook causes a decrease in mood and why people still use it. *Computers in Human Behavior: 35,* 359-363. doi. 10.1016/j.chb.2014.03.003

Shensa, A., Sidani, J. E., Dew, M. A., Escobar-Viera, C. G., & Primack, B. A. (2018). Social media use and depression and anxiety symptoms: A cluster analysis. *American Journal of Health Behavior*, *42*(2), 116–128. doi. 10.5993/AJHB.42.2.11

Sriwilai, K., & Charoensukmongkol, P. (2016). Face it, don't Facebook it: Impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion. *Stress & Health: Journal of the International Society for the investigation of stress*, *32*(4), 427–434. doi 10.1002/smi.2637

Titler, M. G. (2008). The evidence for evidence-based practice implementation. In R.G. Hughes (Ed.), *Patient Safety and Quality: An Evidence-Based Handbook for Nurses.* (pp. 113-161). Rockville, MD: Agency for healthcare research and quality. Retrieved from: https://www.ncbi.nlm.nih.gov/books/NBK2659

Tromholt, M (2016). The Facebook experiment: Quitting Facebook leads to higher levels of well-being. *Cyberpsychology, Behavior, and Social Networking, 19*(11), 661-666. doi. 10.1089/cyber.2016.0259

Vannucci, A. Flannery, K., & Ohannessian, C. (2017). Social media use and anxiety in emerging adults. *Journal of Affective Disorders (207)*1, 163-166. doi.10.1016/j.jad.2016.08.04