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Facebook: Help or hindrance? A study of the relationship between Facebook uses, gratifications, and depression symptoms in the older adult population

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**Facebook: Help or hindrance? A study of the relationship between Facebook uses,
gratifications, and depression symptoms in the older adult population**

by

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A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Journalism and Mass Communication

Program of Study Committee:
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Iowa State University

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DEDICATION

for my family, Ben, and my unfailing support system

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ABSTRACT

Building on the uses and gratifications theory, this research used online survey to examine the relationship between self-reported depression symptoms and the use of Facebook among older adults in Iowa. The purpose of this research was to establish the type of relationship that Facebook use has with those who exhibit depressive symptoms in the population above the age of 65. Existing research has primarily looked at the young adult population, specifically college-age participants, and the relationship has been found to be negative – that Facebook use negatively impacts mental health. This research focused on a different demographic, the older adult population, and the impact that Facebook use has on their mental health. The analysis found that the needs Facebook gratifies the most among older adults are entertainment and interaction based with the most variance explained by social affection and informational gratifications. The results also indicate that Facebook, overall, is more of a hindrance.

CHAPTER 1

INTRODUCTION

Communication, both on a personal and professional level, has changed drastically with the introduction of the Internet. However, the introduction of the Internet was not immediately accepted by every person. Adults, both young and old, failed to see the benefits of the Internet (Sundar & Limperos, 2013). They struggled to adopt, they struggled to accept, and a clear line was drawn – Internet users versus non-users. Slowly, progress was made and by the time the media company America Online, Inc. (AOL) rolled out in 1995, the Internet was beginning to look appealing. In 1995, it was estimated that only 14% of American adults were online compared to the 87% of American adults that now report Internet usage (Duggan, Ellinson, Lampe, Lenhart, & Madden, 2015). Today, only 13% of Americans are not online – and of that 13%, over 50% comes from those who are 50 years and older (Anderson & Perrin, 2016). However, for those in the older adult category who do engage with and use the Internet, 64% of those from ages 50-64 use Facebook regularly (Duggan & Page, 2015). Additionally, almost half of the 65 years and older demographic who use the Internet also use Facebook (Duggan & Page, 2015).

When research started to look at the gratifications being sought with the use of this platform, the aging population was widely left out and the focus became the generation who would grow up with this technology rather than those who had more of a choice to adopt or reject this invention. With the introduction of the Internet, followed by the introduction and acceptance and use of social networking sites, little research was conducted across vast age groups to explore all potential gratifications from using these platforms. According to the Centers for Disease Control and Prevention (CDC) and other national organizations that

specialize in mental illness, the older adult population is the demographic that holds the largest number of persons with mental illness – specifically depression (National Alliance on Mental Illness, n.d.; National Institute of Mental Health, 2016). Without the base knowledge and taking the time to conduct research about what these gratifications could mean to different age groups and the potential relationship between mental health and what the user seeks to gain with their Facebook use (gratifications), the magnitude of the message and the potential or risks associated with the medium will not be fully understood (Bauman & Rivers, 2015). Hence, this study aims to learn about the relationship between Facebook use, the older adult population, and those within the older adult population who show signs and symptoms of depression. In learning about this relationship, this research hopes to gain a better understanding of how social media use may impact the mental health of older adults – whether the relationship is positive or negative.

CHAPTER 2

LITERATURE REVIEW

Existing Research on Social Media

Current literature on social media use and the possible effects that it has on people primarily focuses on the college-aged student population. This focus is on the group of people who were born into this technology and have very little recollection of the world before the Internet and social networking websites, the so-called millennial generation (Ko, Cho, & Roberts, 2005; Naslund, Grande, Aschenbrenner, & Elwyn, 2014). Research that is referenced heavily when discussing the impact of social media use on mental health is research led by Correa, Hinsley, and De Zuniga (2009), which focuses on the relationship between personality traits, social media use, and age. This study found that the overall uses of social media not only differed by gender and traits, such as introversion, life satisfaction, and emotional stability, but they were able to predict, based on those personality traits, whether a person was likely to participate in these media sites. While Correa et al. (2009) concluded that both men and women were more likely to use social media if they exhibited traits of extroversion, they found that as the participants aged, more participants were actually introverted users using social media. However, this research breaks the participants into large groups where the older adult category combines all participants over the age of 30 (Correa, et al., 2009, p. 249). Furthermore, this age group is one of the top demographics that remain undiagnosed and without active treatment (Kennedy, 1962). Many of those who exhibit the symptoms of depression do not seek help for reasons such as embarrassment and the stigma associated with mental illness.

Traditionally, communication research was focused on how the media could influence their audience and used that knowledge to integrate different messages and framing into their

programming or story. With its revolutionary shift in the reasoning behind media use and the role of the consumer, the uses and gratifications theory laid the groundwork to show the specific reasons consumers use the media (Ko et al., 2005; Rosen, Whaling, Carrier, Cheever, & Rökkum, 2013; Whiting & Williams, 2013). As new media were introduced over time, the uses and gratifications theory allowed researchers to study the reason the medium was or was not successful based on the gratifications the audience was seeking (Sundar & Limperos, 2013). It is within this theoretical framework of uses and gratifications, which views media users as active and purposeful consumers rather than passive receivers, that this study sets out to understand the relationship between the gratifications sought with Facebook use among the older adult population. Additionally, gaining an understanding of the relationship between this demographic who exhibit symptoms of depression will allow social media and psychology researchers to have a better understanding of whether the impact of social media use is positive or negative with this demographic. This theoretical approach is appropriate for this study due to the individual's ability to choose the gratifications they are working to obtain from using Facebook.

Older Adult Population

Often overlooked, according to the 2010 U.S. Census, the older adult population makes up over 13% of the total population in the United States. This census also showed that this age group (65+) is also the fastest growing group, with more than 30% growth from the 2000 census. Researchers estimate that this number is going to continue to rapidly grow, since baby boomers started transitioning into this age demographic in 2011. Early estimates show the older adult population almost doubling in number by 2050, with a total demographic estimated at 98 million older adults – compared to only 46.2 million in 2014 (A profile of older Americans, 2015).

While government agencies vary in how they break up populations by the age demographic, the 2010 U.S. Census grouped the adults ages as younger adults (18-44 years), transition to adults 45-64 years old, and the final adult grouping at 65 years old or above, for this research the older adult population will be referring to ages 65 and above. This is to accommodate for the growth in this portion of the demographic with the introduction and expansion baby boomers bring. While the older adult population continues to grow, the introduction and discovery of new medical technology is making it so that the mortality rates are lower and older adults are actually living almost four years longer on average than they were as of 2010 (A profile of older Americans, 2015).

In addition to the physical growth of this population, older adults will also become more diverse, racially and ethnically. With the current environment surrounding racial and ethnic diversity, the growth of this demographic could pose numerous challenges. The number of slurs, jokes, threats, and violence surrounding varying racial backgrounds is continuing to grow in frightening numbers (Dawson, 2016). As this demographic group ages, they will already be facing the fear of ageism in the United States, a nation where elder-care is often regarded as a burden rather than a privilege or family duty (Steinberg, 2005). Declines in mental health and well-being, along with memory loss, are in the top seven disorders that are most concerning for the aging population (Mayo Clinic, 2015). Many doctors and professionals recommend that the best way to keep a person healthy mentally is the same way to keep a person healthy physically – exercise and keep blood vessels open and healthy, keep blood pressure in a healthy range (which means limiting smoking, alcohol, stress, and straining). However, they also recommend events and activities that are mentally stimulating to keep the brain healthy and functioning at its full potential – doing puzzles such as Sudoku, engaging in “stimulating conversations,” and making

sure that interactions with others are happening regularly. With this population, that is not always an option, though. Care facilities are over-populated and understaffed (National Ombudsman Reporting System, 2015). Families can only do so much as caregivers. If a person is immobile and not in an assisted living facility, his or her ability to travel practically disappears.

This is dangerous for both the older adults and their caregivers and places a heavier weight on already maxed-out assisted living and long-term care facilities. In 2014 alone, over 188,000 cases were opened to report unethical or dangerous treatment of those in this population (National Ombudsman Reporting System, 2015). Furthermore, there were only 3 million beds available in an assisted living facility atmosphere for the estimated 12 million older adults who needed long-term care in 2007 (National Ombudsman Reporting System, 2015). Given these challenges related to treatment and care, technology continues to grow in importance as a means of assistance in keeping this demographic healthy and well cared for, both mentally and physically.

Depression

The Centers for Disease Control (2016) defines mental illness as “collectively all diagnosable mental disorders; health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distressed and/or impaired thinking.” The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) provides diagnosis criteria for the multitude of different illnesses associated with mental well-being (American Psychiatric Association, 2013). Worldwide, depression is the number-one disability – leaving millions without the ability to work and attempting to cope with symptoms associated with this disease (National Alliance on Mental Illness, 2016). When taking into consideration the total cost of disability benefits, health care expenditures, and a loss of earnings

due to severe mental illness, the United States alone loses \$317.6 billion a year as of 2002, which is estimated to be a “conservative estimate” because the true cost cannot be calculated without complete self-reporting from those who are symptomatic (National Institute of Mental Health, 2016).

The National Alliance on Mental Illness (2016) reports that one in every five adults in the United States experiences symptoms of a mental illness. However, not everyone who suffers from mental illness reports their symptoms or seeks help, leading to only 1 in 25 adults being diagnosed with a serious mental illness. That said, of the near 16 million adults who are officially diagnosed with depression, it is estimated that number would nearly triple if all adults who experienced symptoms sought out assistance (National Alliance on Mental Illness, 2016). Current research shows that the total number of adults diagnosed with mental illness is twice as large as teens diagnosed with mental illness (Bauman & Rivers, 2015). Of those who exhibit the symptoms of mental illness, specifically depression, at least half do not seek treatment or assistance (Bauman & Rivers, 2015).

Over two million adults in the United States over age 65 suffer from diagnosed depression. Depression in the older adult population is often regarded as just a “sign of aging,” which leads to it being overlooked by both the sufferer and the caregiver. However, symptoms of depression should never be overlooked since depression, at its very basic diagnosis, is an imbalance of brain chemicals and not just a matter of feeling sad (National Institute on Mental Illness, 2016). Many times depression is onset as a response to other diagnoses or life situations (such as losing their significant other, a shift in living situation, money stress) but regardless of its origin, depression is a serious indicator of suicidal ideation in the elderly population (American Psychiatric Association, 2016). Of all of the suicides that take place in the United

States, the older adult population (specifically white males 85 years and above) is responsible for 18% of the total suicides committed annually (Suicide in the elderly, 2016). This demographic makes up 13% of the total United States population, 6% less than the annual suicide rate among older adults.

For the purposes of this study, the symptoms of depression will be defined according to the DSM-V, implemented and updated by the American Psychiatric Association (2013). Based on the diagnostic criteria, the following symptoms are taken into consideration for a diagnosis of depression, covering the varying degrees of the illness. The symptoms include, but are not limited to, a change in activity, feelings of guilt, concentration troubles, and suicide ideation (American Psychiatric Association, 2013). With the varying degrees and intensities of each symptom comes a varying strength of depression diagnosis. Major depression is what is often diagnosed in the United States since it is differentiated as symptoms that have lasted for two weeks or more, with interference in daily life (American Psychiatric Association, 2013).

Taking into consideration the varying degrees of depression and the Health Insurance Portability and Accountability Act, for the purposes of this research, participants will not be asked about a depression diagnosis or if they are seeking treatment. Rather, this research will be implementing the widely accepted Center for Epidemiologic Studies Depression Scale, or CES-D, at the end of the survey as a way to gauge depressive symptoms. This scale was built based on measurements from the depression diagnosis classification from the American Psychiatric Association. Introduced by Laurie Radloff in 1977, the scale was introduced as a means to study depressive symptomology in the general population (Eaton et al., 2004; Radloff, 1977). The CES-D has been used to evaluate depression diagnoses in those struggling with Parkinson's disease, diabetes, and sundowner's syndrome (Williams et al., 2012). The CES-D scale is one of

the few depression scales that is considered public domain and available for unlimited use, regardless of a professional background in psychology (Radloff, 1977). This scale gauges nine different symptom groups of depression: sadness, loss of interest, appetite, sleep, thinking/concentration, guilt, fatigue, movement, and suicidal ideation (Radloff, 1977).

In media research, the CES-D has been used as a way to obtain results on how media imagery affects the targeted or depicted audience. Specifically, Duggan and McCreary (2008) used this scale as a way to measure the influence of media imagery of masculinity on the gay and heterosexual demographic. The CES-D was used to gauge which participants showed signs of depression both before and after the viewing of these images (p. 49). Similar research looking at the impact of body image and self-worth after viewing certain media images has been repeated by multiple researchers (Bergeron & Tylka, 2007; McCreary & Sasse, 2010; van den Berg et al., 2007).

Given the easy access to the scale and the brief nature of the survey, this is typically the first scale presented to an older adult who is showing signs of depression (Eaton et al., 2004). More specifically, there has been great success in using this scale to gauge depression in assisted-living residential facilities and is also the scale used for gauging depression in older adults showing signs of dementia and psychological health as a whole (Pinquart & Sorenson, 2003; Roth, Ackerman, Okonkwo, Burgio, 2008).

Uses and Gratifications

The uses and gratifications theory expands the research Herta Herzog initiated in 1944 that showed the shift in audience engagement from passive to active and the reasoning behind media interaction and usage (Ruggiero, 2000). Traditionally, communication research was focused on how the media could influence their audience and integrate that into the messages

they were sending. However, with uses and gratifications, consumers are seen as driven by their own needs and desires when it comes to approaching media on a daily basis. With the focus shift in the media-audience relationship, this theoretical approach allows researchers to see how, why, and what end game audiences are seeking with their approach to different media (Katz, Blumler, & Gurevitch, 1973).

Herzog began uses and gratification research set out to try to learn why people chose specific media over another. She started her research by interviewing soap opera fans to try to understand what gratifications were being met with their chosen soap opera (McQuail, Blumler, & Brown, 1972). From this research, Herzog concluded that three gratifications were being met: emotional, wishful thinking, and learning. McQuail et al. (1972) then introduced the significance of media diversity and proposed four different categories of media: diversion, personal relationships, personal identity, and surveillance. Expanding the work of both Herzog (1944) and McQuail et al. (1972), Katz et al. (1973) introduced the five need types that summarize the majority of gratification outcomes: cognitive, affective, personal integrative, social integrative, and tension release. These five have only changed slightly since the introduction in 1973 and are still used widely in uses and gratifications research to this day. When researching with this theoretical approach, the participant is asked how the media use fulfilled the need that they were seeking. If the participant was seeking knowledge or understanding, the need was cognitive. If they desired emotion, they were affective. Finally, if the users were looking to better themselves in some way and move forward and up in their lives, they were taking a personal integrative approach. The last two needs focus on the desire to escape from the surroundings (tension release) and build stronger relationships with the outside population (such as staying in touch with family and friends).

While the current pool of research is lacking in the uses and gratifications of the older adult population and their overall, widespread use of social networking sites (specifically Facebook) the research that does exist shows that the same tasks are being performed by multiple age groups for varying intensities of the same gratification. For example, Malik, Dhir, and Nieminen (2016) looked at the gratifications sought with posting digital photos on Facebook and found that, while both age groups (young adult and older adult) posted the pictures as a way to interact with others, the younger adult population had a lower desire to interact with others than the older adult population. As a whole, the younger adult population had gratifications focused on the approval of others and the impression they were giving, while the older adult population focused more on interaction of users (p. 134). While this research was specific to the action of posting photos online, it shows that among the age groups, similar gratifications are sought – as found by Katz et al. (1973) with the introduction of uses and gratification theory – but the intensity in which they are sought varies with the age.

The uses and gratifications theory has been applied to various types of communication platforms, news outlets, and types of content. For example, Ko et al. (2005) looked at the uses and gratification of Internet advertising when the Internet really began to grow. The researchers studied how the Internet was being used as a whole as a way to inform advertisers how websites were being interacted with in order to have the most effective advertising possible. Additionally, this theory has been used on an international scale with researchers Gan and Wang (2015) looking at the uses and gratification of social networking platforms microblog and WeChat. Their research found that there were three core gratifications sought by the users of these platforms – content gratification, social gratification, and hedonic gratification (Gan & Wang,

2015, p. 359). Other researchers like Shaw and Gant (2002) started from the ground up to try to understand the relationship between the hedonic gratification and the Internet.

Applied to the birth of new media by researchers such as Sundar and Limperos (2013), Raacke and Bonds-Raacke (2008) and Ruggiero (2000), the audience became a louder voice for how and why this medium-type was successful and how it was being used. The research conducted following the new media surge showed that this medium changed the way that people interacted with one another (Raacke & Bonds-Raacke, 2008). With sites that are specific to a person's needs and desires (such as social networking sites like Facebook), the user is already approaching the platform with a need – the interaction with a specific population of their choosing (Raacke & Bonds-Raacke, 2008; Ruggiero, 2000). In understanding what gratifications are being sought and which are actually being obtained, these platforms can tailor certain things to appeal to these gratifications sought in order for the maximum audience interaction and usage. Research directed by Johnson and Yang (2009) argues that these social networking sites are not an individual medium but rather that of multiple mass media integration (p. 16). They looked closely at Twitter and narrowed gratifications that are sought and obtained through Twitter to two factors – social motives and informational motives (p. 17). Raacke and Bonds-Raacke (2008) had similar research conclusions in 2008 with a research focus on Facebook and MySpace (p. 173-174).

Uses and Gratifications of Facebook

Introduced in 2004 by Mark Zuckerberg as a platform to only be used by Harvard students, Facebook became an overnight success – and it has maintained that success for the last 12 years. Facebook became open to the public above 13 years old and internationally beginning September 2006 (Frier, 2016). As a social networking platform, Facebook has had to compete

with the likes of MySpace, Twitter, SnapChat, YouTube and dozens of others. While they have acquired Instagram, lessening their competition, Facebook has made a name for itself as the heaviest populated social networking site. As of January of 2016, Facebook had a total of 1.59 billion users and almost \$6 billion in revenue with users spanning the globe (Frier, 2016).

Created as a way to connect students at Harvard to then opening access to all those above 13, Facebook was primarily used for its self-serving purposes. However, the use of Facebook changed significantly in 2008 during the presidential election. President Barack Obama spent time on Facebook campaigning for the younger demographic population, appealing to their desires, and ultimately won over their support and vote (Scherer, 2012).

Now, not only are people using Facebook as a means of communication and connection between family and friends, they are also using it as a means to review, provide feedback, job search, obtain news, and get breaking news updates as they happen (Mitchell, Kiley, Gottfried, & Guskin, 2013). Beyond that, research continues to show the multifaceted capabilities of Facebook. Research from 2014 emphasizes the significance of Facebook with limitless usage potentials. Researchers argue that Facebook is being used to “extend government services, increase civic participation, solicit innovative ideas from the masses, and improve decision making and problem solving” (Khan, Swar, & Lee, 2014, pp. 606-607).

While Facebook is used for a wide variety of reasons, research has consistently shown that the most popular use and gratification for Facebook is to keep in touch with old friends (Correa et al., 2009; Ko et al., 2005; Raacke & Bonds-Raacke, 2008). Interestingly, keeping in touch with old friends consistently rates above keeping in touch with new friends or making new connections (Raacke, Bonds-Raacke, 2008). Other major uses and gratifications surrounding

Facebook include posting/looking at photos, to learn about events, to check the news, and to connect with others (Correa et al., 2009; Ruggiero, 2000).

The desire to connect with others is a commonly sought gratification with social networking sites, but the degree of importance varies greatly with different age groups and personalities. Correa et al. (2009) found that even though the connections being made were largely familiar and existing, that extroverts were still more likely to be the primary users of social media sites (p. 248). However, it was also discovered that those who used Facebook were less likely to feel unsatisfied with their lives, leading the researchers to believe that Facebook could be used as a means to improve self-esteem and overall satisfaction with life. This belief has been studied across the board and the debate on whether social networking sites do harm or good has been widely studied by both media and psychology fields (Ouwkerk & Johnson, 2016; Shaw & Gant, 2002). As these sites grew, support groups all across the Internet grew in response to the demand. Bauman and Rivers (2015) found that these support groups have similar therapeutic benefits to those of a face-to-face mental health professional and the dynamics and processes remain similar as well (p. 15). The utilization of these groups offers a new, low-cost option to those who cannot or will not seek professional face-to-face help.

While the majority of social media users are teenagers to young adults, the older generations using Facebook tripled from 2006 to 2009 and has grown to the point where, as of November 2016, 79% of adults (68% of all United States adults) from the ages of 18 and above use Facebook (Greenwood, Perrin, & Duggan, 2016). For the 65+ age group, recent research shows that 62% of this age group uses Facebook, which was a 14% increase from just the year before (Greenwood et al., 2016).

While there has been significant growth among Facebook users, the growth has, overall, significantly slowed since 2012, leaving researchers to wonder if Facebook has reached its plateau among this demographic (Duggan & Page, 2015). However, as the baby boomer generation continues to age and phase into the older adult-to-retired category, the older adult demographic is predicted to more than quadruple by the year 2030 (A profile on older Americans, 2015). Bobkowski and Smith (2013) found differing characteristics between users and non-users. Most notably, those who were *not* Facebook users tended to be less stable economically, have weaker connections with family and friends, and have a weaker life trajectory plan (p. 771). This research focused on younger adults, who have dominated this field of research. However, as mentioned, the majority of existing research claims that those who *do* use social networking sites are more prone to depression, anxiety, low self-esteem, and low self-worth (Davila, Hershenberg, Shaw & Gant, 2002; Feinstein, Gorman, & Bhatia, 2012; Rosen et al., 2013).

Little research connecting the uses and gratifications sought from social networking sites by the older adult population has been done, which leaves current researchers drawing from dated research surrounding Internet gratifications as a whole while hypothesizing for these variables. Cody, Dunn, Hoppin, and Wendt (1999) found that after spending time teaching an older demographic about technology, the user was open to adopting the technology. Additionally, upon adoption of the technology, the user found that they felt better supported socially and emotionally, along with a reduction of all technology-related anxiety that they were feeling (p. 1571). Interestingly, they also found that general enjoyment was a stronger predictor of use than ease of use or how useful they found the technology to be, which should be taken into

consideration in future research surrounding this topic (Cody et al., 1999). This demographic is driven emotionally rather than cognitively in the integration and adoption of technology

Depression, specifically major depressive disorder, affects close to 15 million adults in America, and this illness can develop at any time (Depression and Bipolar Support Alliance, 2016). Of the 15 million adults who suffer with depression, about six million are considered in the older adult to elderly age group but less than 10% of those six million ever seek or receive treatment for their symptoms (Depression and Bipolar Support Alliance, 2016). The stigma surrounding depression and other mental illness topics lessens the likelihood that someone, adults especially, will seek the help that they need for treatment, even though 80% of those who seek help have a marked improvement in their quality of life (Depression and Bipolar Support Alliance, 2016).

The significance and importance of the aforementioned variables cannot be understated. This research seeks to find the relationship between depression, the older adult population and their use of Facebook. In understanding this relationship, both the media and psychology field will have stronger insight to the pros and cons of Facebook use among this population. With this understanding, both areas will have a stronger understanding of how these variables interact, and in turn can apply the results to usage and treatment.

Research Questions

The purpose of this research is to take a closer look at the relationship between social media usage and symptoms of depression in the older adult population. Understanding this relationship between these variables will be vital in implementing the best treatment plan possible for this population. In gaining this understanding of how the variables work with one another, it will give insight into whether these relationships are negative or positive for the user

and allow for stronger, non-traditional suggestions for or against social media use among the mental health community.

The research questions were :

RQ 1: What are the main Facebook uses and gratifications for older adults?

RQ 2: How frequently do older adults use Facebook?

RQ 3: What is the relationship between the gratifications users receive from Facebook usage and the symptoms of self-reported depression in older adults?

RQ 4: What is the relationship between the frequency of use of Facebook and the symptoms of self-reported depression in older adults?

CHAPTER 3

METHOD

Sampling and Respondents

An online survey was used to collect data among a population of adults 65 years old and above, referred to as the older adult population or demographic. A screening was conducted to include only those who have a Facebook page. For this research, the sample was derived with the use of techniques heavily used by the Pew Research Center when studying different technologies and their impacts (Zickuhr & Smith, 2012.).

This research gathered a convenience sample of older respondents from different groups across the state of Iowa with the demographic focus of older adults 65 years old or above. The sample is a randomized population from two senior-aged engagement groups in the state of Iowa that center on research. With the focus on research, there is probability for a high response rate. However, using established lists could potentially impact the data. Those who have signed up to participate in research show a level of active participation, which could mean that their mental health and depressive symptoms are lower than average for this demographic. This will need to be taken into consideration upon data analysis. 777 older adults received the survey from one of the two groups. This research took place in the state of Iowa where approximately 16% of all Iowa residents are older adults, making the older adult population approximately 492,000 people (2010 U.S. Census). It was the goal of this research to have a minimum response rate of 200 participants. The final total of e-mail survey respondents, after data cleanup, was 179, resulting in a response rate of 23.04%. Little is known about the survey response rate of older adults, though this demographic tends to be weary when providing information for research purposes,

which shows in a typical low response rate (Quinn, 2010). The strong response rate of this research shows an active research participant pool.

In order to encourage patients to take part in the survey, an incentive to enter a drawing for one of two \$50 Visa gift cards immediately followed the end of the survey. Those who completed the survey were given the option to provide their name and contact information to be considered for the gift card incentive. The information entered for the gift card lottery was kept completely separate from the survey response to uphold confidentiality in the results. For participants not willing or able to complete the survey, were still given the option to provide their information for a gift card.

Data Collection

E-mails were sent to participants by third parties who had access to the registry lists. These registry lists were a part of two organizations in the state of Iowa whose focus is on the older adult community and education. The participants have agreed to participate in research when they sign up to be a part of the registry lists. The registry lists being used have already been narrowed down to contain the parameters of the age restriction of 65 years and older. The email contained verbiage and a flyer written and created by the researcher, both containing a shortened link that directed the participant straight to the online survey administered through Qualtrics. To begin, the survey asked the participants to provide their birth year in the demographics section. Only participants age 65 and above (year of birth being 1952 or before) were considered for the analysis of results since that is the demographic focus for this research. In addition to birth year, participants were asked about their current living situation (living alone, assisted living, living with a partner), if they have immediate access to the Internet at their home, and if they have some sort of device that they can use it with (computer, laptop, smart phone,

tablet). Basic demographic information also included gender, annual income, and employment status. The demographics section was the first section that participants began with after consenting to participation. Appendix B contains the demographics and survey in full.

Measures

To measure the uses and gratification of the user, section C of the survey, a five-point Likert scale was used. Participants were given the option to respond “Strongly Disagree” to “Strongly Agree” for 15 questions. The questions in this section addressed the following gratifications, chosen based on existing social media research findings that successfully research social media use (specifically Twitter) as it pertains to uses and gratifications: social interaction, attention seeking, information seeking, and entertainment/pass the time (Johnson & Yang, 2009; Ruggiero, 2000). In order to look at whether frequency impacts the strength or sought gratifications, participants were given 11 questions to rate how often they participated in different activities on Facebook. The seven-point scale ranged from “Never” through “Several Times a Day.” The survey also asked how many hours in a day (0-24) the user spent on Facebook and how many friends they approximately had on their Facebook.

The final portion of the survey was the CES-D screening test to gauge whether the participant was experiencing any signs and symptoms of depression. This was measured with 20 questions, which asked for participants to answer how often they felt a certain way over the last week. The scale had four options ranging from “Rarely or none of the time,” for less than one day up to “All of the times,” for 5-7 days of the week. Of these 20 questions, 16 are scored with a 0-3 point scale that correlates with the option chose. The remaining four questions were questions that had to do with positive experiences, so they were scored oppositely (where a choice of “All of the times” would result in a score of 0 points). Finally, the participants

received two short-answer questions. These questions aim to cover any gratifications that may not have been addressed in the previous sections of the survey and provided the participant the opportunity to air any grievances they have with Facebook. These results will be compared to the sections B and C in order to better understand the relationship between gratifications sought with Facebook use and the impact these variables have on the signs and symptoms of depression.

CHAPTER 4

RESULTS

A total of 191 survey responses were recorded. Upon exporting the results, the data was cleaned out to exclude those who did not complete the survey or were outside the age parameters of the focus of the study. Following the data cleanup, there were 179 responses that fit all parameters that could be analyzed. The average age of the participants was 72 with a minimum age of 66 and maximum age of 95 years old; 55.9% of the participants were between the ages of 66 and 72 (Table 1). Out of the 179 respondents, 135 (75.4%) were female and 44 (24.6%) were male; 79.3% of the respondents were retired, while 11.2% reported still being employed. For income, 26.8% reported having an annual household income from less than \$10,000 up to \$49,999, 14% of the participants earned \$50,000-\$59,000, while 13.4% reported \$100,000-\$149,000, and 13.4% did not provide an answer.

Almost every respondent, 177 (98.9%), reported having access to the Internet and nearly all (178 of the 179) reported owning a personal computer, laptop, tablet, or other smart device that has access to the Internet (Table 1). Approximately 65% reported living with a friend or family member and 31.8% reported living alone in their home. On an average day, 68.2% of participants said they spend approximately 0-1 hour on Facebook and 22.9% spend approximately 1-2 hours on Facebook each day (Table 1). Two respondents reported spending 7 or more hours on Facebook each day. More than half of the participants (65.4%) answered that they have approximately 0-100 friends on Facebook and 20.1% reported having about 101-250. Six respondents said they have 500 or more friends on their Facebook accounts.

Table 1
Demographic Characteristics of Sample

<u>Age</u>	<u>Frequency</u>	<u>Percent</u>
65-68	37	20.7
69-72	62	34.6
73-76	34	20.7
77-80	28	15.6
81-84	7	3.9
85-88	5	2.9
89-92	1	.6
93-96	1	.6
<u>Gender</u>	<u>Frequency</u>	<u>Percent</u>
Male	44	24.6
Female	135	75.4
<u>Income</u>	<u>Frequency</u>	<u>Percent</u>
Less than \$10,000	1	.6
\$10,000-\$29,999	21	11.7
\$30,000-\$49,999	26	14.5
\$50,000-\$69,999	36	20.1
\$70,000-\$89,999	25	14.0
\$99,000-\$99,999	11	6.1
\$100,000-\$149,000	24	13.4
More than \$150,000	10	5.6
Prefer not to answer	24	13.4
<u>Internet access</u>	<u>Frequency</u>	<u>Percent</u>
Yes	177	98.9
No	2	1.1
<u>Living situation</u>	<u>Frequency</u>	<u>Percent</u>
I live alone in my home	57	32.0
I live in my home with a caregiver	0	0
I live in an assisted living facility	0	0
I live in a long-term care facility	4	2.2
I live with a friend/family member(s)	117	65.7
<u>Time spent on Facebook</u>	<u>Frequency</u>	<u>Percent</u>
0-1 hour	122	68.2
1-2 hours	41	22.9
2-3 hours	8	4.5
3-4 hours	3	1.7
4-5 hours	0	0
5-6 hours	0	0
6-7 hours	0	0
7+ hours	2	1.1

Frequency of Facebook Use for Different Interactions

Following the demographics, participants were asked 11 questions and provided a seven-point Likert scale, ranging from “Never” to “Several Times a Day” to gauge how frequently they were using different aspects of Facebook. This was done in another way to understand the relationship between sought gratifications and what the participant is using on this platform in order to reach their gratification goal. While participants did not indicate being on Facebook very long, 80 users (44.7% of respondents) indicated checking Facebook multiple times a day and 56 participants (31.3% of the total respondents) indicated they check their Facebook at least once a day. 42.4% of respondents either “Like” or “Share” posts on Facebook a minimum of once a day but up to several times a day. 92.2% of participants selected “Never” when asked about whether their Facebook use was to “talk about my personal struggles.” 156 respondents (87.2%) said that they “Never” use Facebook to participate in group medical advice. Finally, 80.4% of users selected “Never” when asked how often they post to support groups asking for help or feedback.

Uses and Gratifications

Participants were presented with 15 questions and a five-point Likert scale ranging from Strongly Disagree to Strongly Agree to rank their agreement for the reasons they use Facebook. The top four uses were “to communicate with friends and family who live far away” with a mean value of 3.81, “to be entertained” with a mean value of 3.29, “to relax” and “to gather information, such as news” each mean reported at a 3.01. 67.6% of all respondents either chose “Agree” or “Strongly Agree” to using Facebook as a means to communicate with friends and family who live a distance away and 52.5% indicated “Agree” or “Strongly Agree” to using Facebook for entertainment. This began to indicate potential top gratifications of socialization and information-seeking. The least significant uses of Facebook were “to take care of my mental

health” with a mean value of only 1.72, “as a way to meet new people,” reporting a mean of 1.74, and “to give/receive advice” with a mean of 1.97. More than 50% of the users chose “Strongly Disagree” when asked if they use Facebook as a way to “take care of their mental health.”

CES-D Measurement Results

Participants were given the standard Center for Epidemiologic Studies Depression Scale (CES-D) to gauge possible symptoms of depression. The CES-D presents 20 questions with a four-point Likert scale, asking the user to rate how often they experienced certain feelings over the last week. The Likert scale ranged from “Rarely or none of the time (less than one day)” to “Most or all of the time (5-7 days).” Five participants did not answer any of the questions in the CES-D section of the survey.

The scores were, overwhelmingly, on the low end of the scales. The lower the score, the lower the signs and symptoms of depression. The scores that ranged the highest on the Likert scale were for the four questions asking about positive feelings: “I enjoyed life” (54.7% responded feeling this way for 5-7 days), “I was happy” (48% answered that they felt this way 5-7 days of the last week), “I felt that I was just as good as other people” (62.6% responded feeling this way 5-7 days of the last week), and “I felt hopeful about the future” (39.7% reported feeling this way the past 5-7 days). While there is not much variance between the variables in this scale overall, specific questions had responses that were overwhelmingly at one end of the response scale. 86% of respondents said that they experience little to no feelings of being disliked by others. 90.5% responded that they had not cried in the last week and 91.6% responded that they had not noticed a change in their appetite over the last week. However, some questions, such as restlessness, ability to focus, feeling sad overall, and the ability to get up and “get going” were

more spread out over the scale. The majority percentage tended to fall in the “little to none of the days” on the scale but the aforementioned variables scattered with the remaining 10-30% on “some or a little more of the time (1-2 days)” and “occasionally or a moderate amount of time (3-4 days)” showing that this population is not as black and white as it may look initially.

Results: Factor Analysis

In order to gain better understanding of the variability in the variables presented for sought gratifications and the symptoms of depression, factor analyses were run. The 15 uses and gratifications questions were entered into a factor analysis with a Varimax with Kaiser

Table 2

Uses & Gratifications Factor Analysis Grouping

Informational (Cronbach α =.83)
UG 3: I use Facebook to gather information, such as news.
UG 6: I use Facebook to participate in discussions.
UG 8: I use Facebook to learn interesting facts.
UG 13: I use Facebook to share information (news, links, etc).
Social Affection (Cronbach α =.85)
UG 2: I use Facebook to receive support
UG 4: I use Facebook to feel less lonely.
UG 7: I use Facebook to take care of my mental health.
UG 9: I use Facebook as a way to meet new people.
UG 12: I use Facebook to give/receive advice.
Entertainment (Cronbach α =.82)
UG 5: I use Facebook to pass the time.
UG 11: I use Facebook to relax.
UG 15: I use Facebook to be entertained.
Social Interaction (Cronbach α =.76)
UG 1: I use Facebook to stay in contact with family.
UG 10: I use Facebook to communicate with friends and family who live far away.
UG 14: I use Facebook to communicate easier.

Table 3
Factor Analysis on 15 Uses and Gratifications Measures

Gratification	Informational	SocialAffection	Entertainment	Social Interaction
UG 3	.80			
UG 6	.66			
UG 8	.75			
UG 13	.71			
UG 2		.65		
UG 4		.73		
UG 7		.75		
UG 9		.77		
UG 12		.59		
UG 5			.83	
UG 11			.71	
UG 15			.80	
UG 1				.86
UG 10				.87
UG 14				.53
Value	3.18	3.02	2.34	2.02
% of total variance	21.18	20.10	15.59	13.46

Note: Measured on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. Factor loading <.50 suppressed.

Rotation method: Varimax with Kaiser Normalization.

normalization rotation, which resulted in all 15 questions clustering into four factors (Table 2) with a cross-loading greater than .50. The analysis explained a total of 70.32% of the variance for the entire set of variables.

Table 3 shows how each of the four factors scored, including the value and percentage of total variance. The first factor that was extracted was called “informational uses and gratifications” and included four items: using Facebook to gather information; to participate in discussions; to learn interesting things; to share information. This factor explained 21.18% of the variance. Reliability analysis found a Cronbach alpha of .83 for this factor. A composite score was computed by adding all of the items up in the factor and dividing by the number of items in

a given factor. For the “informational” factor, the mean score was 2.80 and had a standard deviation of 1.03. The second factor extracted, labeled “social affection,” explained 20.10% of the variance, and included five items: using Facebook to receive support; to feel less lonely; to take care of mental health; as a way to meet new people; to give/receive advice. Reliability analysis resulted in a Cronbach alpha of .85, with a mean score of 1.93 and a standard deviation of .79. The third uses and gratifications extracted factor was labeled “entertainment” and contained three items: use of Facebook to pass the time; to relax; to be entertained. Reliability analysis found a Cronbach alpha of .82 and this factor accounted for 15.59% of the variance. The third factor had a mean score of 3.06 and a standard deviation of 1.04. The last extracted factor was labeled “social interaction,” represented 13.46% of the variance, and contained three items: use of Facebook to stay in contact with family; to communicate with friends and family who live far away; to communicate easier. Cronbach alpha reliability analysis resulted with a .76 for this factor, with a mean of 3.52 and standard deviation of .98.

In addition to the factor analysis of the uses and gratifications variables, the depression variables were also subjected to a factor analysis. While the existing pool of research does not indicate to utilize a factor analysis for the CES-D, this research felt it necessary to factor the 20 questions down into groups for easier understanding of the symptomology groups. In order to allow all variables to be rotated for the analysis, the factor loading scale includes all amounts .40 and above. All 20 questions were factored into a total of five different categories: fear/isolation, positive outlook, concentration/effort, unsettled/uncomfortable, and reserved/shy (Table 4). The analysis explains 60.25% of the total variance among the CES-D variable questions. Table 5 shows the breakdown of all factored groups. The first factor, labeled “fear/isolation,” explained 13.24% of the variance and contained five items: I thought my life had been a failure; I was

fearful; I felt lonely; I had crying spells; I felt that people disliked me. Reliability analysis resulted in a Cronbach alpha of .76. The mean and standard deviation for the composite score, computed by summing up the five items included in this factor and dividing by five resulted in a mean of .17 and a standard deviation of .33.

Table 4
Factor Analysis for 20 CES-D Measures

Fear/Isolation (Cronbach α =.76)
CESD 9: I thought my life had been a failure.
CESD 10: I was fearful.
CESD 14: I felt lonely.
CESD 17: I had crying spells.
CESD 19: I felt that people disliked me.
Positive Outlook (Cronbach α =.75)
CESD 4: I felt that I was just as good as other people.
CESD 8: I felt hopeful about the future.
CESD 12: I was happy.
CESD 16: I enjoyed life.
Concentration/Effort (Cronbach α =.74)
CESD 5: I had trouble keeping my mind on what I was doing.
CESD 7: I felt like everything I did was an effort.
CESD 11: My sleep was restless.
CESD 18: I felt sad.
CESD 20: I could not "get going."
Unsettled/Uncomfortable (Cronbach α =.71)
CESD 1: I was bothered by things that usually don't bother me.
CESD 2: I did not feel like eating. My appetite was poor.
CESD 3: I felt that I could not shake the blues, even with help from my family.
CESD 6: I felt depressed.
Reserved/Shy (Cronbach α =.51)
CESD 13: I talked less than usual.
CESD 15: People were unfriendly.

The second factor was labeled “positive outlook” and contained four items: I felt that I was just as good as other people; I felt hopeful about the future; I was happy; I enjoyed life. Cronbach alpha reliability analysis resulted in a score of .72. For this factor, the scores were reversed since they were positively associated. Instead of a score of three for an answer of “all or most days (5-7 days),” these four questions received a score of zero. This scoring followed the original CES-D scoring set up by Radloff (1977) with the introduction of the CES-D scale. The mean for the positive outlook factor was .71 and the standard deviation was .68.

The third factored group, titled “concentration/effort,” contains five items: I had trouble keeping my mind on what I was doing; I feel like everything I did was an effort; my sleep was restless; I felt sad; I could not “get going.” Reliability analysis was run with a Cronbach alpha score of .74. The mean was .44 and the composite standard deviation was .46 for the third factor. The fourth factor was labeled “unsettled/uncomfortable” and contains four items: I was bothered by things that don’t usually bother me; I did not feel like eating. My appetite was poor; I felt that I could not shake the blues, even with help from my family; I felt depressed. Cronbach alpha reliability analysis resulted in a score of .71. The mean for this factor was .22 and the standard deviation was .40. The last group was labeled “reserved/shy.” This group contained two items: I talked less than usual; people were unfriendly. Reliability analysis resulted in a Cronbach alpha score of .51. The fifth factor had a standard deviation of .48 and mean score of .36.

Results: Research Questions

RQ 1: What are the main Facebook uses and gratifications for older adults?

Participants were given 15 questions that focused on the uses and gratifications of Facebook use. They were presented with a five-point Likert scale ranging from “Strongly

Table 5
Factor Analysis on 20 CES-D Measures

Depression Question	Fear & Isolation	Positive Outlook	Concentration & Effort	Unsettled & Uncomfortable	Reserved & Shy
CESD 9	.78				
CESD 10	.74				
CESD 14	.44				
CESD 17	.49				
CESD 19	.61				
CESD 4		.73			
CESD 8		.53			
CESD 12		.79			
CESD 16		.78			
CESD 5			.59		
CESD 7			.69		
CESD 11			.57		
CESD 18			.52		
CESD 20			.62		
CESD 1				.67	
CESD 2				.53	
CESD 3				.77	
CESD 6				.57	
CESD 13					.65
CESD 15					.76
Value	2.65	2.63	2.60	2.47	1.72
% of total variance	13.24	13.13	12.97	12.33	8.57

Note: Measured on a 5-point Likert scale ranging from Rarely to none of the time (0-1 days) to Most or All of the Time (5-7 days). Factor loading <.40 suppressed.
 Rotation method: Varimax with Kaiser Normalization.

disagree” to “Strongly agree” for their answer options. From those 15 focused questions, a total of four factored groups emerged: informational, social affection, entertainment, and social interaction. Informational and social affection account for over 40% explanation of variance and contains over half of the total uses and gratifications questions. The remaining two factors, social interaction and entertainment, represented approximately 30% of the total variance, still representing strong gratifications among the population. While social affection may represent a

higher variance percentage, the aspect of social interaction was, overwhelming, the most sought gratification among this demographic.

The strongest gratification fell under the social interaction factor with “I use Facebook to communicate with friends and family who live far away,” with almost 68% of respondents agreeing or strongly agreeing with that statement. Also in the social interaction factor, “I use Facebook to stay in contact with family” almost 69% agreeing or strongly agreeing with that statement, showing the strong relationship between these variables in the social interaction factor.

Users seeking social interaction gratification can be seen in both the quantitative data results and the brief short answer questions offered at the end of the survey. With short answers like “I like the social contact with friends and family,” “contact with others far away,” keeping in touch,” and “easy contact with both words and pictures with friends and family far away,” social interaction is indeed one of the top gratification factors among this demographic.

However, another strong factor represented in the data and in the short answers was entertainment. The use of Facebook as a way to be entertained (approximately 53% agreed or strongly agreed) and to relax (approximately 37% agree or strongly agree) account for two of the three variables included in the entertainment factor. The strength in the responses is echoed by the short answers where approximately 30% the participants specifically mention entertainment in the short answer question asking what they primarily used Facebook for. Some responded that “it’s entertaining to interact with others,” “I find it entertaining, which helps with the boredom and loneliness, especially during winter,” and “I find the games entertaining and mentally stimulating.”

The only other strongly represented variable with a mean above three was the use of Facebook to gather information, such as news with about 40% agreeing or strongly agreeing with that use. These results suggest that social interaction is the primary gratification sought when this demographic uses Facebook.

In addition to looking at the gratifications of Facebook use, frequency of Facebook activities were analyzed to learn the relationship between activities on Facebook and sought gratifications of Facebook use. A model fit linear regression was run. The four uses and gratification factors served as the dependent variables to the 11 frequency-based questions for different Facebook activities, age, and gender as the independent variables. Table 6 shows the results of that analysis, along with the R^2 values and R^2 adjusted in parentheses under the R^2 value, and the *SE* in parentheses under the beta coefficient value.

For those who primarily look for information gratification, the significant predictive activities were searching for news stories ($p = .000$), posting to support groups ($p = .04$), “liking” or “sharing” posts ($p = .001$), and using Facebook as a means to chat with another person ($p = .002$). All of the linear relationships were positive, showing that the more the user participates in those specific activities, the more likely they are to be seeking the information gratification.

Seeking social affection from Facebook correlated with participating in group medical advice ($p = .01$), talking about personal struggles ($p = .045$), searching for news stories ($p = .002$), and using Facebook as a means to chat with another person ($p = .001$). These linear relationships were also positive. The positive relationship suggests that increased use of the aforementioned activities results in a higher desire to go to Facebook for social affection. The third factor, entertainment, was positively related to searching for news stories ($p = .003$), “liking” or “sharing” posts ($p = .018$), and using Facebook as a means of chatting with another

person ($p = .006$). Engaging in the aforementioned activities leads to a stronger likelihood of Facebook use for entertainment purposes.

Lastly, there is the social interaction factor. Social interaction only had two statistically significant predictive activities: posting to support groups for feedback ($p = .024$) and using Facebook as a means to communicate with another person ($p = .009$). These relationships were all positive, showing that the introduction and increase in the above activities guides the user to a gratification of social interaction.

RQ 2: How frequently do older adults use Facebook?

Frequencies and descriptive analysis were run on the question specifically asking about time spent on Facebook. This research question was important in order to understand the nuances of each participant's Facebook habits. Almost half (44.7%) of respondents said that they checked their Facebook pages several times a day and 31.3% of respondents said that they checked their Facebook page "about once a day." Spending 0-1 hour a day on Facebook was the overwhelming consensus of the sample, with a total of 122 respondents (68.2%) answering 0-1. Only 41 people (22.9%) answered that they spend 1-2 hours on Facebook a day, and the remaining 13 participants spend anywhere from 2-7+ hours on Facebook each day. Three people did not answer the question. Additionally, frequencies were run on the first section of the survey, asking the participants how often they partake in different Facebook-based activities (posting a status update, chatting with friends, etc.). The participants were given a 7-point Likert scale with varying frequencies, beginning with "Never" and ending with "Several times a day," in order to answer how frequently they utilize different aspects of Facebook. The question with the strongest response was "how often do you check your Facebook page," resulted in approximately 76% of respondents checking their Facebook once or several times a day.

Table 6*Uses and Gratification Factors Relationship with Specific Facebook Activities*

	Informational	SocialAffecti on	Entertainment	SocialInter action
Gender	-.059 (.124)	-.121 (.123)	.162 (.169)	.273 (.147)
Age	-.006 (.009)	-.005 (.009)	-.024 (.013)	-.018 (.011)
How often do you:				
Check your Facebook page	-.020 (.047)	-.019 (.746)	.097 (.065)	.096 (.055)
Post status update	.046 (.040)	.040 (.040)	-.087 (.055)	.078 (.047)
Browse other profiles and photos	-.060 (.037)	-.006 (.036)	-.014 (.051)	.034 (.044)
Comment on another person's post	.011 (.045)	.007 (.044)	-.085 (.061)	.014 (.054)
Participate in group medical advice	.173 (.111)	.279* (.109)	.087 (.153)	.041 (.130)
Talk about my personal struggles	.111 (.092)	.182* (.090)	.124 (.126)	.073 (.107)
Search for news stories	.201*** (.028)	.087** (.028)	.117** (.039)	.023 (.033)
Post to support groups asking for help or feedback	.124* (.059)	-.004 (.058)	-.014 (.081)	-.158* (.070)
"Like" or "Share" posts	.139** (.041)	-.032 (.040)	.133* (.056)	.053 (.048)
Use Facebook as a means to let others know I care about their feelings	-.015 (.038)	.046 (.038)	-.010 (.053)	.061 (.045)
Use Facebook as a means to chat with another person	.124** (.040)	.133** (.039)	.152** (.055)	.123** (.047)
Constant	1.411 (.762)	1.323 (.746)	3.015** (1.055)	2.578** (.904)
R ²	.628 (.596)	.404 (.351)	.317 (.257)	.463 (.416)

* $p < .05$; ** $p < .01$; *** $p < .001$; two-tailed Note: Gender: Men = 1; women =2

Following checking their Facebook page, there is also a high mean of “liking” or “sharing” posts from others (42.4% participate at least once a day), browsing other profiles and pictures (32.4%), and commenting on other posts (31.2%). There was also a relatively strong response to the use of Facebook as a means to searching for news stories (26.8%) and to let others know that I care about their feelings (17.3%). This shows that the informational and social affection factors may be the two of the strongest factors among the four uses and gratifications factors given the strength of the mean scores in the frequencies of use.

RQ 3: What is the relationship between the gratifications users receive from social media usage and the symptoms of depression in older adults?

In order to answer this question, multiple linear regressions were conducted in SPSS. The five factors of depression were used as dependent variables against the four uses and gratifications factors. Table 7 shows the results of that analysis, including the R^2 value with the R^2 adjusted value in parentheses and the *SE* in parentheses immediately under the coefficient score. Most of the factors had very low R^2 , showing that there are other factors that need to be taken into consideration when looking at what might impact the signs and symptoms of depression. Cumulatively, the R^2 values only added up to .41, showing just how significant outside factors are on depression symptoms.

While three of the four uses and gratification factors did not have statistical significance, the fourth factor, social affection, did result in statistical significance when related to the depression factors. With social affection and the fear/isolation factor, a *p*-value of .002 shows a strong, positive correlation among the factors. This suggests that the more a person seeks social affection on Facebook, the likelihood of experiencing fear/isolation depression symptoms also increases. For social affection and the relationship with the concentration/effort factor, a *p*-value of .003 indicates another statistically significant positive relationship among variables. This

suggests that an increase in social affection gratification is associated with an increase in concentration/effort-based depression symptoms. There was also a positive relationship between social affection and the unsettled/uncomfortable factor ($p = .000$) and the reserved/shy factor ($p = .032$).

It is important to note that in the social affection factor, two of the five individual uses and gratifications questions did not receive any responses that would indicate a strong agreement with the statement. Those two, to give/receive advice and to take care of my mental health, also had extremely low mean values (1.97 and 1.72 respectively), indicating a significant amount of the sample disagreeing with those particular uses. So, it is possible that the lack of variance in the sample response is impacting the significance of this factor's interaction with the signs and symptoms of depression.

The only other statistically significant independent variable in this regression was gender. There was a negative association between gender and the unsettled/uncomfortable depression factor. In this instance, since men were coded as a "1" and women were coded as a "2", the finding suggests that women are less likely to experience the unsettled/uncomfortable symptoms than men. The unsettled/uncomfortable factor included feeling depressed, an inability to shake the blues (even with assistance), being bothered by things that do not typically bother the participant, and having a poor appetite. Indeed, a separate independent-samples t-test found that the mean score for this CES-D factor was .16 for women and .40 for men.

In an attempt to gain a stronger understanding of the individual gratifications and how they impact the different depression factors, a linear regression model was conducted with the five depression factors as the dependent variables and each individual gratification question (15 in total) serving as an independent variable. Table 8 shows the results of that regression, along

with the R^2 values with adjusted R^2 in parentheses and SE in parentheses under the coefficient value. The R^2 values are markedly improved in comparison to the uses and gratification factors. The individual variables lead to a cumulative R^2 value of .883, explaining 88.3% of the variance. Table 7 shows that there is more significance on an individual level.

Table 7

Relationship Between Depression Factors on Uses & Gratification Factors

	Fear/Isolation	Positive Outlook	Concentration/Effort	Unsettled/Uncomfortable	Reserved/Shy
Gender	-.039 (.061)	.129 (.135)	.068 (.088)	-.180** (.071)	-.096 (.095)
Age	-.007 (.004)	-.004 (.010)	.001 (.006)	-.008 (.005)	-.009 (.095)
Informational	-.019 (.034)	-.011 (.075)	-.059 (.049)	-.044 (.039)	-.062 (.053)
Social Affection	.145** (.046)	.158 (.101)	.198** (.066)	.200*** (.053)	.154* (.071)
Entertainment	-.025 (.031)	-.017 (.068)	.010 (.044)	-.014 (.036)	.012 (.048)
Social Interaction	-.040 (.031)	-.045 (.068)	-.007 (.045)	-.022 (.036)	-.015 (.048)
Constant	.712* (.355)	.732 (.796)	.010 (.516)	.963* (.414)	1.105 (.575)
R^2	.089 (.053)	.024 (-.015)	.077 (.041)	.162 (.130)	.058 (.031)

* $p < .05$; ** $p < .01$; *** $p < .001$; two-tailed

Note: Gender: Men = 1; women =2

The most significant gratification question was UG 4, “I use Facebook to feel less lonely.” This variable had statistical significance in three of the five depression factors: fear/isolation ($p = .009$), positive outlook ($p = .009$), and unsettled/uncomfortable ($p = .001$).

However, all of the relationships were a positive relationship, indicating that the level of depressive symptoms actually increases as the user seeks out Facebook for the gratification of feeling less lonely. While the literature on this demographic and the impact of Facebook on depressive symptoms is scarce, the literature on a younger demographic supports this notion that Facebook use has a negative impact on depression symptoms, that the more a person uses Facebook, the more depressive symptoms tend to show (Hayes, van Stolk-Cooke, & Muench, 2015; Shaw & Gant, 2002).

UG 6 (“I use Facebook to participate in discussions”) also had significance across multiple depression factors: fear/isolation ($p = .046$); concentration/effort ($p = .047$); unsettled/uncomfortable ($p = .001$). All three relationships represent negative linear relationships, suggesting that an increase in participation in discussions as a gratification could actually decrease the severity of the depression symptoms. While the gratification seems similar to UG 4, the UG 6 and UG 4 actually fall in two different factors. UG 6 is a part of the informational factor, whereas UG 4 is a part of the social affection factor – a factor that has already revealed itself as having a negative relationship with depressive symptoms. Additionally, participants noted that the use of Facebook was for active discussion, which could be the distinguish needed between these two variables in order to understand the differences in relationships. Individual CES-D questions were not run against the factored uses and gratifications due to the fact that there was no research question specifically addressing this relationship.

Participants were given the ability to answer two short-answer questions about their own personal views of what the pros and cons of Facebook use were. A full analysis of the qualitative data accumulated was not completed due to it being beyond the scope of the research.

Overwhelmingly, conversation and social interaction was mentioned. Participants went so far as to talk about the messenger application of Facebook and how it allows them to have “near constant conversations” with friends and family internationally with no cost. Other participants appreciated the conversations that could be had about holidays, the 2016 presidential election, the World Series, and even noted how they appreciated the ability to get dozens of birthday wishes. The active participation and conversations that Facebook allows seems to be the important factor to consider when looking at the potential negative and positive relationships among the variables in this research.

RQ 4: What is the relationship between the frequency of use of social media and depressive symptoms in older adults?

In order to gain a stronger understanding of the relationship between these two variable groups, a linear regression was run. The five factored depression groups were set as dependent variables and the 11 questions represented regarding varying activities on Facebook. Table 9 shows the outcome of these regressions, including the R^2 value with the adjusted R^2 in parentheses, and SE in parentheses under the recorded coefficient.

In these results, age emerged as a statistically significant predictor again. For two factors, fear/isolation ($p = .021$) and reserved/shy ($p = .032$), the relationship is negative. This shows that as age increases, the less likely fear/isolation and reserved/shy symptom groups are less likely to occur. Gender becomes statistically significant ($p = .001$) for the unsettled/uncomfortable factor and is a negative factor, so as gender increases (women, coded as a 2, compared to men coded as a 1), the less likely they are to experience unsettled/uncomfortable depression symptoms. The frequency of how many times a user checks their Facebook page shows statistical significance for the positive outlook factor ($p = .017$) and reserved/shy factor ($p = .047$).

Table 8*Relationship of Depression Factors on Individual Uses and Gratification Questions*

	Fear/Isolation	Positive Outlook	Concentration/Effort	Unsettled/Uncomfortable	Reserved/Sshy
Gender	-.070 (.063)	.079 (.140)	.010 (.092)	-.210** (.074)	-.122 (.100)
Age	-.006 (.004)	-.002 (.009)	.001 (.006)	-.007 (.005)	-.008 (.007)
UG 1	-.016 (.028)	.031 (.062)	-.012 (.041)	-.039 (.033)	-.065 (.045)
UG 2	.029 (.039)	-.154 (.084)	.102 (.056)	.000 (.044)	.024 (.061)
UG 3	-.007 (.030)	.001 (.065)	-.057 (.043)	-.021 (.034)	-.004 (.047)
UG 4	.086** (.032)	.205** (.072)	.081 (.047)	.131** (.037)	.085 (.052)
UG 5	.031 (.027)	.043 (.061)	.055 (.040)	.008 (.032)	.060 (.067)
UG 6	-.067* (.033)	-.124 (.074)	-.098* (.049)	-.101* (.039)	-.088 (.053)
UG 7	.046 (.042)	.117 (.094)	.053 (.061)	.023 (.048)	.060 (.067)
UG 8	.009 (.032)	.008 (.070)	.035 (.047)	.024 (.037)	.005 (.051)
UG 9	-.035 (.036)	-.082 (.081)	-.051 (.052)	-.001 (.041)	-.050 (.056)
UG 10	-.028 (.032)	-.077 (.072)	.009 (.047)	.006 (.037)	.023 (.052)
UG 11	-.040 (.033)	-.064 (.071)	-.029 (.047)	-.029 (.037)	-.048 (.051)
UG 12	.009 (.037)	.060 (.081)	.011 (.053)	.052 (.042)	.038 (.059)
UG 13	.044 (.027)	.103 (.060)	.062 (.039)	.044 (.031)	.003 (.043)
UG 14	.013 (.032)	.033 (.070)	-.010 (.046)	.028 (.036)	.058 (.050)
UG 15	-.035 (.030)	-.030 (.066)	-.031 (.044)	-.032 (.035)	-.042 (.047)
Constant	.730* (.358)	.627 (.794)	.097 (.525)	.980* (.416)	1.137 (.587)
R ²	.194 (.096)	.142 (.039)	.161 (.062)	.260 (.172)	.124 (.019)

* $p < .05$; ** $p < .01$; *** $p < .001$; two-tailed

Note: Gender: Men = 1; women =2

This relationship is a negative one, however, suggesting that the more often a person checks their Facebook page a day, the less likely they are to have a positive outlook. But, this also means that the more a person checks their Facebook page, they are less likely to experience reserved/shy depressive symptoms.

The next significant frequency activity was how often they post a status update. This variable showed as statistically significant for fear/isolation symptoms ($p = .042$) and concentration/effort symptoms ($p = .032$). This is a positive relationship, meaning that as the frequency of status posts increases, so do the symptoms in the fear/isolation and concentration/effort factors. Posting to a support group asking for help or to give feedback was the next variable that showed significant results. The significance came from two groups: fear/isolation ($p = .022$) and positive outlook ($p = .034$). The relationship is positive, showing that increased frequency of group posting increases both the fear/isolation symptoms and the symptoms in the positive outlook factor. A few participants provided short answers that could explain this phenomenon, claiming that while they felt good that they were able to help someone online, they felt sad that they could not provide more help and were fearful that they could not provide enough help.

Table 9*Relationship of Depression Factors on Facebook Activities*

	Fear/Isolation	Positive Outlook	Concentration/Effort	Unsettled/Uncomfortable	Reserved/Shy
Gender	-.007 (.063)	.125 (.128)	.084 (.089)	-.252** (.076)	-.101 (.093)
Age	-.011* (.005)	-.011 (.009)	-.002 (.006)	-.010 (.006)	-.016* (.007)
How often do you:					
Check your Facebook page	-.044 (.024)	-.116* (.048)	-.028 (.033)	-.027 (.028)	-.070* (.035)
Post status update	.042* (.020)	.068 (.042)	.062* (.029)	.030 (.024)	.036 (.030)
Browse profiles and photos	.004 (.018)	-.005 (.038)	.004 (.026)	.018 (.022)	.011 (.027)
Comment on another person's post	-.034 (.022)	-.058 (.046)	-.028 (.031)	-.043 (.027)	-.027 (.033)
Participate in group medical advice	-.022 (.056)	-.053 (.115)	-.105 (.079)	-.006 (.067)	-.080 (.083)
Talk about my personal struggles	-.033 (.046)	-.101 (.094)	-.039 (.065)	-.040 (.055)	-.054 (.068)
Search for news stories	-.004 (.014)	.047 (.029)	-.002 (.020)	.006 (.017)	.002 (.021)
Post to support groups asking for help/feedback	.069* (.030)	.134* (.063)	.067 (.042)	-.005 (.036)	.018 (.044)
"Like" or "Share" posts	.007 (.021)	.050 (.042)	.013 (.029)	-.002 (.024)	.008 (.030)

Table 9 continued

...as a means to let others know I care about their feelings	-.021 (.020)	-.063 (.039)	-.011 (.027)	.009 (.023)	.005 (.028)
...as a means to chat with another person	.024 (.021)	.016 (.041)	.023 (.028)	.042 (.024)	.043 (.030)
Constant	1.178** (.382)	1.834* (.788)	.537 (.538)	1.475** (.462)	2.005** (.597)
R ²	.124 (.046)	.117 (.040)	.076 (-.004)	.145 (.071)	.116 (.039)

* $p < .05$; ** $p < .01$; *** $p < .001$; two-tailed
 Note: Gender: Men = 1; women =2

CHAPTER 5

DISCUSSION

Implications of Research Outcomes

A survey was emailed out to 777 adults who met the age criteria of 65 years old or older. The results show that, by and large, the most sought gratification centered on communicating with friends and family far away. Representing the top two gratifications factors based on the total percentage represented, the informational and social affection factors represented the majority gratification. However, the top three individual gratifications were, in order, “using Facebook as a means to communicate with friends and family who live far away,” “using Facebook to stay in contact with family,” and “using Facebook to be entertained,” which fall into the social interaction and entertainment factors. Existing research results show that the majority of users in this demographic are going online for social interaction and emotional support, which is not wholly supported in this research (Naslund et al., 2014; Ouwerkerk & Johnson, 2016; Sundar & Limperos, 2013). While the social affection factor provides individual gratifications for emotional support, the aspect of interaction with others was a completely different factor. A factor that, interestingly enough, was the least significant of the four.

Taking individual gratifications into consideration, the two questions that specifically mention communicating with friends and family is strongly. With frequent mentions of keeping in touch with friends and family, the benefit of a free international platform for communication, getting to see pictures, and interact with new and old friends suggest that social interaction is the most significant gratification, the results suggest that the use of the platform for these reasons is actually providing more emotional support than the user realizes.

While the activities often fit in some or all of the gratification factors, it is important to note that the use of Facebook is a subjective one and is one that is individualized to the person. That said, what one person may think is a gratification of entertainment, another user could see it as a gratification of social affection. Also, uses and gratifications does not mean that the user is seeking media for one specific gratification – often, multiple gratifications are being met with one medium (Ruggerio, 2000). The more effective the medium is, the more likely users are to be drawn in because their needs are met with one platform instead of having to seek multiple platforms to meet multiple sought gratifications (Ruggerio, 2000).

The vast majority of participants check their Facebook page at least one time a day, but almost half of the respondents checking Facebook multiple times a day. These findings are similar to research led by Greenwood et al. in November of 2016, showing that the majority of users are checking the Facebook page multiple times a day or, at minimum, just once a day. In addition to just logging into their accounts, they are primarily “liking” and “sharing” posts from others, browsing other profiles and photos, and commenting on another person’s post. These findings, however, are in direct contradiction to existing research centered on this age group’s primary use of Facebook. Hayes et al. (2015) found that users were less likely to “like,” “share,” and/or comment on posts or pictures that their friends share on Facebook. They also found that social fulfillment was not being met among older adults who are using Facebook, when the results of this research point in an opposite direction with social affection presenting as a strong factor. However, part of the differing opinions could be explained by Wu, Damnee, Kerherve, Ware, and Rigaud (2015), who found that the apprehension to learn technology creates feelings of discomfort and fear. Wu et al. (2015) stresses the significance of teaching an older adult user the primary uses of technology and platforms in an attempt to weaken the symptoms of

apprehension and uncertainty. This suggests that, regardless of the potential external depressive symptoms, the user is likely to experience a certain level of uneasiness and discomfort with the use of Facebook.

That said, the level of depressive symptoms were extremely low in this sample. The highest mean scores were for the four positive-based CES-D questions, which shows that the sample population is self-reportedly healthy mentally. Some other depression symptoms that were significant, compared to the results of the four positive outlook questions, were feelings of restlessness, an inability to focus, overall feeling sad, and feelings of loneliness. These symptoms, while they are representative of depression symptoms, are also representative of the normal aging process (Segal, Qualls, & Smyer, 2011).

What is interesting is the negative linear relationship between gender and unsettled/uncomfortable depression symptoms. This research suggests that women are less likely to experience these symptoms compared to men, which is in direct contradiction with a vast majority of existing research that says that women are more likely to be depressed and be bothered by things that do not typically bother them (Segal et al., 2011). Research in this field relies heavily on self-reporting, which could explain the significantly different results. While it is difficult knowing whether focus and restlessness are symptoms of depression or if they are just a part of the aging process, they are still significant to note and should not be overlooked.

Main contributions

The results of this research have some significant contributions to the existing body of research. One of the most significant findings centered around gender and the finding that men are more likely to experience symptoms of being uncomfortable/unsettled in their time online. Existing research focuses on how symptomology shows, primarily, in women without much

mention to the frequency of symptoms in men. This could suggest underlying medical concerns. This could also suggest that men are more uncomfortable with their knowledge of the online community and how to use Facebook. With existing research discussing comfort on Facebook and the apprehension of older adults and its use, again, the focus is primarily on women.

Another major contribution is the findings surrounding the social interaction and social affection factors. While social interaction has been the primary focus of existing research, this research found that social affection explained more of the variance than social interaction. However, social interaction did have two of the top individual gratifications as a part of its factor. This interesting dichotomy suggests that, perhaps, there is more of a relationship between social interaction and social affection within this demographic than current research suggests. This research shows that it is no longer just the younger generation or young adults seeking affection with their Facebook use – it is older adults, as well.

In addition to certain major topics that are addressed on Facebook, this research also pinpointed the primary uses of Facebook among this adult demographic. Surprisingly, this research found that searching for news stories was one of the most statistically significant Facebook activities. This suggests that as the user becomes older, in addition to interaction and affection, Facebook is actually being used as a center hub for major news stories. The shift in Facebook use and its focus has been mentioned in existing research but there has been little research conducted that speaks about the shift in what the user is interacting with on Facebook.

Lastly, the qualitative data was also very telling for this research. Similar to the young adults who use Facebook, respondents shared the desire to keep in touch with others and interacting with others as their primary gratifications sought. However, something that is not mentioned in existing research is that this older adult demographic also struggles with spending

too much time on Facebook and acknowledges that they consider it to be addicting. The struggle with a healthy consumption of Facebook time without having it consume their days was the number one grievance respondents had. This is a topic that has not yet been approached by the research community and addition to the medium is something that has a younger audience emphasis in the current body of research findings.

Limitations and Future Directions

There are limitations to this research that need to be taken into consideration. First, the survey was sent during the holiday months, which could lead to higher feelings of loneliness, sadness, and depression (National Alliance on Mental Illness, 2015). This was something pointed out by several of the participants who emailed the researcher, citing that they did not use Facebook. In relation to the time period that this was sent out, it was also sent shortly after the 2016 presidential elections. Many participants noted that they were using Facebook less because of the drama associated with the election and expressed frustration with how Facebook “changed” during the election season. Fake news was mentioned frequently in association with the election-related frustration.

Location of sample is another limitation of this research. While the research yielded a 23% response rate, the sample was comprised solely of older adult residents from the state of Iowa and not nationwide. Since the study is based on a convenience sample, the results cannot be generalized to other populations. This makes it difficult to generalize since the convenient sample was solely in the state of Iowa. Along with that, the demographics were not even, and there was a significantly larger response from women than men. Finally, the sample was comprised of participants who had already signed up and agreed to be a part of the research community. That said, they are active members of the community and willing to be of

assistance, which could indicate that participants, overall, have lower depressive symptoms than that of the average person in this demographic.

The study also only focused on those who actively use Facebook. All comparative depression levels were based on existing research up until this point in time, which could allow for significant discrepancy between existing research and current experiences. This research also only focused on Facebook as a social media platform due to its level of usability, integration, and growth since its release to the public. Different social media platforms could illicit a different set of responses or reactions with their use.

Future research should focus on a larger sample size in order to gain a better understanding of the relationship between variables. Additionally, the time of year and longevity of the survey should be taken into consideration since seasonal disorders can mimic the signs and symptoms of depression. Future research should also open the survey to both Facebook and non-Facebook users in order to get an updated CES-D score on the non-users for comparative purposes with the user group. Finally, future research could look at social media as a whole instead of narrowing it down to sole Facebook use to see if there is a significant difference among platforms or if there is no change in depressive symptoms.

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APPENDIX A. IRB APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
2420 Lincoln Way, Suite 202
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Date: 12/13/2016

To: Katherine Anthony
1115 SW 28th St. Apt. 203
Ankeny, IA 50023

CC: Raluca Cozma
118 Hamilton Hall
Tracy Lucht
111 Hamilton Hall

From: Office for Responsible Research

Title: Facebook: Antidote or poison? A study of the relationship between Facebook use and symptoms of depression in the older adult population

IRB ID: 16-557

Study Review Date: 12/9/2016

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
 - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
 - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required

by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

APPENDIX B. SURVEY QUESTIONS**Section A****Gender**

Male

Female

Prefer not to answer

What year were you born? _____**Employment status: I am currently...**

Employed

Self-employed

Unemployed

Homemaker

Student

Retired

Unable to work

Other (*please explain*)**Annual median household income:**

Under \$5,000

\$5,000 to \$9,999

\$10,000 to \$14,999

\$15,000 to \$24,999

\$25,000 to \$34,999

\$35,000 to \$49,999

\$50,000 to \$74,999

\$75,000 to \$99,999

\$100,000 and over

I'd rather not say

Do you have access to the Internet? Yes/No**Do you own a personal computer (PC), laptop, tablet, or other smart device that can access the Internet?** Yes/No**What is your current living situation?**

I live alone in my home

I live in a home with a caregiver

I live in an assisted living facility

I live in a long-term care facility

I live with a friend or family member

Part B

Please choose the most appropriate response for how often you do the following	Never	Once or twice a month	Every few weeks	1-2 days a week	3-5 days a week	About once a day	Several times a day
Check your Facebook page							
Post status updates							
Browse other profiles and photos							
Comment on another person's post							
Participate in group medical advice							
Talk about my personal struggles							
Search for news stories and updates							
Post to support groups asking for help or feedback							
"Like" or "Share" posts from others							
Use Facebook as a means to let others know that I care about their feelings							

Use Facebook as a means to chat with another person							
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Section C

Below are reasons that people use Facebook. As it applies to yourself, rate the statements for level of importance as it pertains to your Facebook usage.

Rate based on how applicable the statements are for your personal Facebook usage	Strongly Disagree	Disagree	Neutral or N/A	Agree	Strongly Agree
I use Facebook to stay in contact with family.					
I use Facebook to receive support.					
I use Facebook to gather information, such as news.					
I use Facebook to feel less lonely.					
I use Facebook to pass the time.					
I use Facebook to participate in discussions.					
I use Facebook to take care of my mental health.					

I use Facebook to learn interesting facts.					
I use Facebook as a way to meet new people.					
I use Facebook to communicate with friends and family who live far away.					
I use Facebook to relax.					
I use Facebook to give/receive advice.					
I use Facebook to share information (news, links, etc).					
I use Facebook to communicate easier.					
I use Facebook to be entertained.					

On average, how many total hours do you spend on Facebook each day? (0-24 hours):

Approximately how many Facebook friends do you have?

0-100

101-250

251-500

More than 500

Unknown

Section D

Please answer the questions below for the ways you have felt or behaved *in the last week*

Place an (X) in the appropriate column. During the past week	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
1. I was bothered by things that usually don't bother me.				
2. I did not feel like eating; my appetite was poor.				
3. I felt that I could not shake off the blues even with help from my family.				
4. I felt that I was just as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt that everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				

18. I felt sad.				
19. I felt that people disliked me.				
20. I could not "get going."				

Section E

1. What benefits do you receive with Facebook use?

2. Are there any downfalls to your Facebook use? Please explain.
