

Social networks, social support, and mental health: Exploring responses to behavioral cues associated with depression in an online social network

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Depression is one of the leading health disorders worldwide and research shows that social support plays an important role in mitigating the impact of this mental health issue. Accordingly, individuals' social networks play a significant role in their health and wellbeing. This study explores how users of social networks respond to symbolic behaviors commonly associated with depression (e.g., frequent posts, sharing stress, and communicating negative affect) in an online social network. Semi-structured interviews were conducted with thirty-two participants and inductive analytic procedures were used to process the data. Three themes emerged from the data as responses to online behavior commonly associated with depression: supportive communication, curtailed communication, and establishment of communication barriers. This research suggests that the process of receiving social support in an online social network may be challenging for people suffering from depression and that social network site users' awareness of behavioral cues that may signal depression among friends in their online social networks is low. Suggestions for future research are offered in response to these findings.

Keywords: social support, online social networks, mental health, depression

The positive impact of social support on health and wellbeing is widely noted among researchers and health practitioners alike. Social support, defined as the verbal and nonverbal behaviors that provide assistance to others, have been shown to moderate the effects of individual health and wellbeing (Albada & Moore, 2013; Burleson & MacGeorge, 2002; Goldsmith, 2004; Vangelisti, 2009). Indeed, it seems the architecture of, and exchange within, our social worlds affects our health and overall quality of life. Studies also indicate that social support, *or the lack thereof*, can impact individuals' physical and mental health (Albrecht & Goldsmith, 2003; Argyle & Martin, 1991; Hefner & Eisenberg, 2009; Uchino, Cacioppo, & Kiertcolt-Glaser, 1996), and the essential nature of social support in sustaining health and wellbeing across the lifespan has been well documented (Levula, Wilson, & Harre, 2016).

Though social support is commonly viewed as a positive conduit for sustaining and/or improving health and wellbeing, researchers have noted the complexity of the means through which social support is sought and received (Vangelisti, 2009). Given the ubiquity of social interaction in online environments, the multitude of processes through which people seek and/or receive social support has never been more multifaceted. This provides researchers with an opportunity to better understand how online social support is *enacted* and/or *withheld* and the specific symbolic behaviors that sustain, enhance, or inhibit human health and wellbeing.

One area of increasing interest to communication researchers, mental healthcare providers, and technology professionals is the relationship between social media use and mental health. As the Internet has become progressively integrated into people's daily lives, there is more and more interest in understanding how human interaction in virtual environments contributes to psychological health. While there is a lack of robust evidence that social media use directly causes mental health problems such as depression (Best, Manktelow, & Taylor, 2014; Selfhout, Branje, Delsing, Bogt, & Meeus, 2009), researchers *have* noted that people who deal with depression often turn to social media for information, connection, and/or support (Moreno et al., 2011; Valkenburg, Peter, & Schouten, 2006). Given the propensity for people suffering from depression to turn to social network sites (SNSs) to meet various needs, scholars argue that ongoing research in this area is essential to enabling those suffering from depression to successfully manage their psychological health. This study answers that call by exploring how social network users respond to online behaviors commonly enacted by people with depression.

It is not rare to hear idiosyncratic reports of people having friends who consistently fill their social network feeds with "negativity." Such narratives often describe ostensibly self-focused friends who routinely engage in frequent posting or over-sharing, continually post about the stress in their lives, or often seem to be in a bad mood. It is not uncommon for this range of behaviors to unfold in online spaces, but how do people respond when they encounter such behaviors and what do they make of it? There are many possible reasons one might communicate

negative affect or share stressful events in online spaces, including simple information sharing or catharsis (Moore, 2017; Moore & Craig, 2009; Wright & Muhtaseb, 2011). But how many people consider that a constellation of these behaviors over time might be a sign that a social tie (e.g., friend, family member, acquaintance) is in need of social support or that they may be experiencing depression?

The purpose of this study is to explore how social support is enacted and/or inhibited when social network users are exposed to communication behaviors (e.g., frequent posts, sharing stressful life events, and negative affect) commonly exhibited by people suffering from depression. This study also examines whether social network users perceive such behaviors as potential signs of depression in people with whom they have social ties. Given the importance of social support in the lives of people suffering from depression, this study aims to help researchers and health practitioners better understand the role of online communication in support processes. What follows is an examination of research central to the current study, including literature on social support processes, the provision of online support, and the impact of social support on mental health. Specifically, the research presented focuses on the positive role of social support, including online support, in health and wellbeing. A description of a qualitative methodology utilizing in-depth interviews follows the literature review. Ultimately, findings of the study are presented and discussed, limitations of the study and suggestions for future research are offered, and practical implications are discussed.

Social Support

Human survival depends on the ability to build mutually beneficial relationships. Humans have a deep-seated desire to feel connected and it is argued that feelings of connectedness play an essential role in sustaining physical and psychological health and wellbeing (Baumeister & Leary, 1995; Brewer, 2004). Researchers and theorists from a variety of disciplines have studied the ways in which social relationships can support human prosperity. Studies indicate that establishing and maintaining social connections can help people cope with a variety of unexpected life events, increase empathic responses, improve trust and cooperation, and decrease the risk of depression and other health disorders (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997; Glaeser, Laibson, Scheinkman, & Soutter, 2000; Hawkley, Masi, Berry, & Cacioppo, 2006). The quality of our social relationships, quite simply, contributes significantly and profoundly to human health and wellbeing.

While social connection in and of itself may perform an essential function in human wellbeing, researchers also agree that it is the interactions with people to whom we are connected that play an important role in allowing humans to function effectively and flourish (Baumeister & Leary, 1995). Fletcher and Fitness (1990) contend that it is not merely the existence of social connectedness or social exchange, but the presence of *positive* thoughts, feelings, and behaviors that leads to psychological wellbeing. It is the positive valence of our social exchanges, researchers contend, that supports mental wellbeing, not simply the existence of social connection and/or interaction. Simply put, it matters whether our perceptions of our social connections and social exchanges are positive or negative. Thus, understanding the symbolic nature of our social worlds is paramount in comprehending the impact of social relationships on human health and wellbeing. This study attempts to make a contribution to that understanding.

According to Burleson and MacGeorge (2002), the specific symbolic behaviors (i.e., verbal and nonverbal) that provide assistance to others are defined as supportive communication. Researchers and theorists most often conceptualize enacted supportive communication as *social support*. As one might expect, the kinds of social support people seek, give, and/or receive is multifaceted. Studies indicate that a variety of supportive communication can promote human health and wellbeing by boosting self-esteem, providing health-relevant information, motivating healthy behavior, promoting self-care, and reducing emotional distress, to name a few (Burleson & MacGeorge, 2002; Cohen & Wills, 1985; MacGeorge, Feng, & Burleson, 2011).

Communication researchers have documented several common types of social support, including: emotional support, esteem support, informational support, network support, instrumental support, tangible support, and appraisal support (Burleson & MacGeorge, 2002; Goldsmith & Albrecht, 2003; Xu & Burleson, 2001). Emotional support, for example, includes expressions of empathy, care, or acceptance (e.g., acknowledging what a friend is going through or expressing your love for them) whereas esteem support affirms identities, enhances another person's self-worth, or expresses the value of another person (e.g., telling a family member how important

they are in your life). Information support involves such behaviors as offering information or providing advice (e.g., sharing the name of a reliable healthcare provider or advising a colleague to take time off at work to care for their health) while network support includes exchanges that provide new social connections or somehow expand a person's support resources (e.g., connecting friends going through similar situations or introducing someone to an online support group). Instrumental support includes behaviors such as assisting with tasks (e.g., helping a friend arrange childcare or driving their kids to school) and, somewhat similarly, tangible support is providing literal tangible aid (e.g., bringing a meal to a friend). And lastly, appraisal support involves communication that offers new ideas or perspectives in a given situation (e.g., helping a friend positively reframe a negative situation). Whether providing people with much needed emotional support, helping people complete meaningful tasks, or offering well-intended advice, scholars agree that the content of social exchanges shapes the ways our social connections impact our health and wellbeing.

Social Support & Social Network Sites

Social support commonly unfolds face-to-face, but it is also something that increasingly occurs in mediated environments such as social network sites. Due to the ubiquity of new technologies and the widespread acceptance of social interaction in online contexts, more and more people are turning to virtual communities to connect with others. Social network sites not only provide people with platforms to establish connections, but they also operate as conduits through which individuals can seek, provide, and/or receive social support (Moore & Craig, 2009). Studies show that computer-mediated social support commonly includes informational, emotional, appraisal, and instrumental support (Lieberman & Goldstein, 2005; Pull, 2006; Winefield, 2006; Wright & Muhtaseb, 2011). According to High and Solomon (2011), online interaction *coexists* with face-to-face interaction as modes for giving as well as receiving the support that is so important to human health and wellbeing.

Traditional conceptualizations of social support often include face-to-face exchanges with significant others such as spouses, family members, and close friends (i.e., strong tie networks). However, researchers have stressed the importance of understanding the role computer-mediated communication plays in social support processes. People commonly interact with significant others face-to-face, but people also increasingly interact with significant others in online spaces. What's more, social network sites expand users' social connections to people beyond those with whom they have close relationships to include a wider range of social relationships (i.e., weak tie networks). Studies show that weak tie networks can often be as effective as strong tie networks in providing social support. Wright and Bell (2003) note that weak ties can sometimes provide more effective social support than strong ties due to the fact that weak tie support can be sought and/or received without the risk of damaging close relationships. Additionally, weak tie networks could potentially offer more diverse points of view, feedback with greater objectivity, and information that is more multifaceted than strong tie networks. In sum, researchers agree that there are important empirical links between online supportive communication and health outcomes, but more research needs to be done in this area to discern the ever-evolving costs and benefits of seeking, giving, and/or receiving support online.

Social Support, Social Networks, & Depression

Mental illness is one of the most prevalent health issues worldwide, and depression impacts more people than any other kind of mental illness (Chouhury, Gamon, Counts, & Horvitz, 2013; Kessler et al., 2005). Mental illness accounts for nearly half of the disease burden for young adults in the U.S., and the presence of major depressive disorder (i.e., depression) is just over 10% in the general population of adults in the U.S. aged 18 to 25 (Center for Behavioral Statistics and Quality, 2016). Among college students, reports of students suffering from depression commonly range from one quarter to one half of the population, with growing numbers of students reporting symptoms related to depression (Furr, Westefeld, McConnell, & Jenkins, 2001; Pace & Trapp, 1995). Depression not only has negative health outcomes on individuals, but the impact of depression can affect partners, friends, family members, as well as others socially connected to those suffering from the disorder (i.e., both strong and weak tie networks). Beyond the psychological and social burden of depression, the economic impact in the U.S. is more than \$210 billion per year (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2015).

Given the escalating prevalence of depression in the general population, researchers and practitioners alike are increasingly interested in discovering factors that might help assuage the impact that depression can have on

human health and wellbeing. One body of work that is getting a significant amount of attention is the relationship between the use of social network sites and mental health. Researchers have examined how social network sites impact self-esteem (Valkenburg et al., 2006), investigated the negative psychological health implications of social comparison on social network sites (Appel, Crusius, & Gerlach, 2015), and explored the effectiveness of social support in computer-mediated health support groups (Rains & Young, 2009). Researchers have even developed preliminary predictive tools in order to identify depression among social network users (Choudhury et al., 2013).

What seems evident to date is that online social outreach for people managing concerns about health and wellbeing is prolific, including those with mental health disorders such as depression (Wright, 2016). Additionally, studies indicate that there are several behavioral cues in online social networks that often characterize depression, including increases in: 1) frequency of social network posts, 2) communication about stressful life events, and 3) expressions of negative affect (Choudhury et al., 2013; Moreno et al., 2011). Despite this growing body of work, much remains to be learned about the relationship between social media use and depression. Researchers note, for example, that it is not only important to understand behavioral cues that may help identify those at risk for or suffering from depression, but it is also *essential* to understand reactions and/or responses to those cues among social ties. That is, it is of importance to consider how social ties respond to behaviors often enacted by people with depression and whether those responses, or lack thereof, stand to enhance or inhibit mental health. Doing so may be useful for researchers and practitioners in developing and disseminating information and/or interventions that could assist people suffering from depression with mental health management processes.

Of significance to the current study is how people react to behaviors commonly associated with depression when exposed to them via a social network site (i.e., Facebook). Though studies have provided some compelling evidence about common online behaviors associated with people suffering from depression, information about how their social ties respond to such cues is lacking. As noted by Wright and Muhtaseb (2011), "research should continue to focus on computer-mediated support and health outcomes, and researchers should attempt to disseminate findings to potential users and healthcare professionals in an effort to increase education about these sources of social support" (p. 150). Thus, the following research questions guide this study:

RQ1: How do social network site users respond to online friends' behaviors associated with depression such as frequent posts, sharing stressful life events, and negative affect?

RQ2: To what extent do social network users perceive behaviors such as frequent posts, sharing stressful life events, and negative affect as communicative indicators of depression?

Method

The current study collected data face-to-face in a human subjects laboratory. Semi-structured interviews were utilized along with a dual sampling process aimed at ensuring saturation of the data. Data analysis was performed using inductive methods informed by grounded theory (Charmaz, 2000), and checks were performed to confirm internal and external validity of the data before reporting findings.

Participants

Thirty-two participants were recruited through criterion and snowball sampling via campus recruitment flyers and word of mouth. Participants included university students over 18 years of age who had a Facebook account for a minimum of one year and who self-identified as a "routine user" of social network sites. In the initial sample, 25 participants were interviewed. A second phase of interviews was conducted after data analysis from the initial sample was complete; this was done in order to ensure that the categories that emerged from the initial sample were saturated. Saturation occurs when new data no longer render new theoretical insights about established categories or relationships between or among categories (Strauss & Corbin, 2008). Seven more interviews were conducted in order to reach saturation using the same recruitment and sampling method as the initial sample.

The majority of the participants ($N = 32$) were women ($n = 27$) and the average age of participants was 21 years old. Participants included African-American ($n = 4$), Latinx ($n = 2$), and Asian ($n = 1$) individuals, but the majority of participants were Caucasian ($n = 24$); one participant requested that the researcher not include their

ethnicity in the data. All of the participants reported routine use (i.e., daily login) of the social networking site Facebook, and all but one participant reported having at least three social networking accounts (e.g., Instagram, Snapchat, Twitter). All participants reported that they engage in dyadic exchange (i.e., they send and receive symbolic messages such as posts, likes, and comments) on Facebook.

Procedure

The recruitment announcement directed those who were interested in participating in the study to a research laboratory where they would be able to sign up for specific date and time to be interviewed by a trained research assistant. Once participants arrived for their scheduled session, each reviewed and completed the appropriate informed consent forms approved by the institutional review board prior to the start of the interview. The face-to-face sessions began with a few basic demographic items and progressed as semi-structured, in-depth interviews. Interview protocols were semi-standardized such that predetermined questions were used for all interviews, but questions were most often open ended so that participants could describe their online experiences and share their perceptions of symbolic behaviors on social network sites (Kvale, 1996). Additionally, this open-ended interview procedure allowed for the development of follow-up questions in real time in reaction to participants' responses (Berg, 1995). Interviews were scheduled for 30-45 minutes. The average length of interviews was 33 minutes and they ranged from 27 to 49 minutes. As agreed, all reports of interview data are reported herein using pseudonyms in order to maintain confidentiality of participants.

Data Analysis

The data from the initial sample were analyzed by the author of this manuscript using inductive methods associated with grounded theory (Charmaz, 2000). According to Boyatzis (1998), this type of approach is data-driven, which allows for themes to emerge from participants' responses rather than a priori conceptual categories. Open coding was performed for each of the participants' responses to interview questions in order to identify key concepts in the data. Open coding was then followed by axial procedures aimed at identifying themes and categories that exist in the data as well as relationships among the emergent categories (Strauss & Corbin, 2008). Once the initial sample was analyzed, the remaining seven interviews were analyzed using a constant comparative method (Strauss & Corbin, 1998). During this process each point of datum was compared with the existing concepts and categories in order to establish similarities and differences, and to ultimately determine fit. In the end, a final set of categories and themes was established for the entire sample.

In order to establish internal validity of the data, a trained research assistant conducted an audit of the findings. After examining 20% of the data set selected at random, it was established that the conclusions drawn from the analytic process were accurate and reflected the themes and categories derived from the data. Additionally, ten percent of study participants were contacted post-analysis and asked to conduct member checks in order to establish external validity. Specifically, three participants were asked to review the themes and categories that emerged from the data analysis and confirm or disconfirm that the author's conclusions accurately represented their online experiences and perceptions of symbolic behaviors encountered on social network sites; the data was confirmed.

Findings

All participants in this study reported responding in multiple ways to online behaviors such as frequent posts, sharing stressful life events, and communication containing negative affect. Data analyses produced three themes that explicate social network site (i.e., Facebook) users' responses to behavioral cues common among people suffering from depression: *support*, *curtail communication*, and *establish barriers*. Participants reported an overt willingness to respond with support to social connections that communicated stressful life events, though their willingness to be responsive was qualified. However, participants described an overall reluctance to engage with social connections that engage in frequent posting or routinely sharing negative affect online. Additionally, participants' lacked a general awareness of online behavioral cues that might signal depression in online friends. The results presented herein rely primarily upon quoted excerpts from the interviews in order to bring life to participants' voices and lived experiences. The names of participants have been changed in order to protect their identities.

Support

Participants in this study reported a general willingness to respond with support to online social connections (i.e., Facebook friends) that communicate about a stressful life event. Importantly, however, their willingness to be responsive was often qualified by a friend's frequency of communication about stressful life events. All of the participants noted that they had at least one friend who had recently posted on Facebook about a stressful life event or stressful situation; most participants noted that several of their friends had posted about stressful events in the past. Likewise, all but two of the participants recalled a time when they had posted on Facebook about a stressful life event. A participant named Bailey noted that she posted about a stressful event, "finding out that my mom had cancer," the week prior to her interview.

Participants' responses to friends sharing stressful life events most often materialized as support via "likes" as well as comments intended to support the person who made the initial post due to an acute situation. Based on participants' verbal reports, the most common type of support response was brief emotional support messages such as "love you," "I'm sorry," "I know how that feels and it's awful," or "I got you." It was also common for participants to recall appraisal support messages such as "it sucks that your car is totaled, but the good news is this means you get to pick out a new car" or "sounds like today has been rough, but tomorrow will be here very soon and it will be better." Ashley explained, "If I see from someone's post that they are stressed out because they have gone through a situation that caused some kind of, like, trauma I will definitely offer them encouraging words or let them know that I am here for them by liking their post." Sarah commented:

When someone is going through something specific [that is stressful] and they put it out there I think that takes courage and most times I'll say something about it like 'keep your head up' or...you know, let them know that I want to support them even though in reality there is nothing I can actually do.

Many participants were able to identify with the notion of experiencing an acute stressful life event and communicating about that event via Facebook post. This may have played a role in their willingness to be responsive to others who find themselves in similar stressful situations given the social norm of reciprocity. Though participants reported a general willingness to be responsive to "friends" experiencing *acute* stressful life events, 28 of the 32 participants in some way qualified their responses. That is, the vast majority of participants spontaneously reported having "friends" that *chronically* seemed to be in the midst of a stressful events, and expressed significant hesitation about their willingness to provide support for such friends on an ongoing basis. Elliott captured the essence of most participants' responses by explaining:

I consider myself a good friend and am always willing to support my friends going through stressful situations, but I have a couple of friends who are *always* going through stressful situations [the participant used air quotes] and it's just not possible for me to be genuine in my comments to them when it's something every day or every week. There are only so many times you can tell someone you hope they feel better or support them when it's always something new. After a while it just loses all meaning and there is no point.

Thus, it seems that participants' responses to being confronted with friends' posts about stressful life events has limitations rooted in temporal aspects of the exposure such as frequency (i.e., acute versus chronic posts). Thus, people who routinely post about stressful situations or life events, it seems, may experience attrition in the responsiveness of their online social connections. Unfortunately, such findings raise potential concerns about people suffering from depression who may continually seek direct or indirect support via social networks. People sometimes develop depression as a byproduct of experiencing several consecutive stressful or traumatic life events. Thus, if they post about stressful events chronically and their social resources become exhausted before or during the onset of depression, they may be less likely to experience supportive communication online during a time when social support may be particularly valuable. Furthermore, people suffering from depression are more likely to experience everyday life as a stressful event. For some, getting out of bed or going to work or school may be a stressful act. If people suffering from depression routinely post about ongoing stressful events, the likelihood of enduring social support seems prone to diminish according to these interview data.

Curtail Communication

Participants in this study consistently described a reluctance to respond to online social connections that engage in frequent posting or habitually include negative affect in their communication regardless of whether that “friend” was a strong tie or weak tie. All of the participants expressed that they curtail communication with social connections on Facebook as a result of what they described as friends’ “excessive posts” or “ongoing negativity.” Participants routinely shared what they saw as abnormal levels of activity, which was most often qualified as more than one post per day. Reese commented, “If you’re posting something every single day you might be on the edge, but if you are posting more than once a day something probably needs to change if you don’t want to get judged.” Participants often described daily activity such as browsing Facebook and “liking” other people’s posts as being less significant in determining whether they curtailed their communication with a friend, but excessive message posting was articulated as a clear motive to curb interaction. Avery explained:

When someone gets excessive with posts you sort of start to wonder if they have a life. I mean, no one needs to see what you are doing every minute of every day or read the diary of your life on social media. It’s comes off as like...arrogant or maybe self-absorbed. And so I just respond to those people less often than my other friends because it’s just too much to respond to all the time.

Participants also universally describe friends’ negative affect as the dominant reason why they curtail communication with friends on social network sites. Specifically, participants articulated that ongoing negative posts show a “lack of awareness” as well as a “kind of self-focus” that is not desirable even among close friends (i.e., strong ties). Sydney said:

Everyone has problems and we all expect to hear about our people’s feelings from time to time. You know, someone has a bad day or just needs to blow off some steam after reading something crappy on the Internet. But there are just some people who always have something negative to say and is just like a negative person who blows up your feed every day with some asinine thing. So I am careful about it and sometimes just stay quiet until I see them post something positive and then I’m all “like, like, like, smiley face.”

A few participants described having close friends or relatives who routinely engaged in sharing negative thoughts, feelings, or information. What’s more, they described a similar process through which they curtailed their communication and ultimately their exposure to them on Facebook altogether. Jaden explained, “At first I would comment or reply to his negativity. You know, trying to be nice. But it fed the lion and I had to stop.” Ryan added, “I love my brother, but it got to the point where I had to be like...bro, no motions [no emotions] in public...and I just pretended I didn’t see his post because I knew he expected a reply and I couldn’t go there.”

Additionally, two participants noted that friends who engage in excessive “commenting” also compel them to inhibit communication. For example, participants described refusing to “like” comments or reply to comments made by serial commenters. Taylor notes, “I like it when people comment on my posts, but if someone comments on *all* of my post and they are commenting on every post out there then it seems like it’s not genuine and I don’t reply or ‘like’ it.” And Kristin noted, “I once had this friend who always had something negative to say. I could be like ‘what a beautiful day’ and she would be like ‘it’s supposed to rain tomorrow.’ She brought me down all the time and so, over time, I just stopped responding to her.”

Curtailing communication in online social networks, particularly in response to a friend’s frequent posts or ongoing negative communication, may have multiple origins. It may be a self-protective mechanism used to avoid information or affective overload. Alternatively, it could serve as an avoidance strategy used to strategically circumvent negative thoughts and feelings about one’s social connections. It could also be a simple result of compassion fatigue, which is common among those who are continually exposed to those who are suffering or in distress. Regardless of the underlying mechanism, these data present a predicament for people suffering from depression given their propinquity to make frequent posts in social networks and, as a result of illness, are prone to view as well as communicate about the world through a negative lens.

Establish Barriers

A final theme that emerged from interviews was the tendency for participants to establish barriers in response to exposure to friends' frequent or excessive posts in online social networks and/or exposure to communication that frequently contains negative affect. Participants noted that sometimes curtailing communication was insufficient to manage online social connections and that establishing barriers was necessary. Carson commented:

There have been times when I realized that stepping back and not engaging them is not enough. When that happens I usually hide their feed so that I'm not exposed to [certain] people's negativity. If they somehow still show up in my feed because they tag me or something I go to settings and lock it down....that sounds extreme, doesn't it? But there have been times when it was necessary for my own sanity, you know?

Another participant, Shawn, described a situation wherein they used Facebook settings to establish a barrier between themselves and a close relative.

I had this aunt who was always doing this 'poor me' thing on Facebook. It seemed to always get her attention from some people, but it got really old for me and I had to adjust my feed because of it. I felt bad at first, but I ultimately unfriended her because it was everything negative all the time. I think my sister unfriended her, too.

The situation Shawn described is somewhat unique because a recurring sentiment that emerged from the data was a hesitance of individuals to create *absolute* barriers (e.g., completely hiding a feed, unfriending someone) between themselves and social connections with whom they have close relationships (i.e., strong ties). Participants did not report establishing such barriers with partners or close friends, but one quarter ($n = 8$) of the sample mentioned establishing barriers with a family member and approximately two-thirds of participants ($n = 21$) mentioned doing so with someone with whom they were socially connected online such as a coworker, classmate, or friend. Thus, 25% of the sample engaged in establishing barriers that would not only prevent them from seeing specific chronically "negative" friends posts, which would also result in creating a barrier for the provision of social support for those individuals.

Though establishing barriers may be characterized as negative response to frequent posts or exposure to friends' negative thoughts, feelings, or behaviors, it is possible that establishing barriers may allow some kinds of relationships to endure that might otherwise deteriorate or end altogether. In this way it is possible that establishing virtual barriers, particularly among one's weak-tie connections, may paradoxically serve as a conduit through which such relationships can be sustained in the face of undesirable social behavior. However, it is significant for researchers and mental health practitioners to consider the implications of social barriers being raised; such barriers have the potential to exacerbate feelings of isolation or loneliness among those suffering from depression. Further research could benefit from exploring such issues.

Beyond exploring how people respond when confronted with specific behaviors online, this study also explores the extent to which social network users perceive common behaviors such as frequent posts, sharing stressful life events, and negative affect as communicative indicators of depression. Though engaging in such behaviors does *not* mean that someone is depressed, research indicates that such online behaviors are common among people suffering from depression (Chouhury et al., 2013). Thus, it may be helpful for researchers and mental health practitioners to understand how people respond to potential support seeking behaviors in online environments. The current interview data do not suggest participants' awareness that the aforementioned behaviors have a robust relationship with depression, though four participants raised concern about the social adjustment or wellbeing of people who engage in these behaviors. Marian commented, "Something is not right if someone is constantly posting on Facebook." And Charlie said:

I don't understand people who are always putting the negative parts of their life out there. It's okay to talk about stressful events every now and then, but when someone talks about it all the time I think it creates this negative world that no one wants to be a part of. No one. It just doesn't make sense [to me].

As a result of these data, it seems apparent that people are unfamiliar with behaviors that might signal a need for social support or be indicative of mental health concerns. Fortunately, research indicates that social support isn't always entirely positive; in fact, social support can sometimes be undesirable because the process of receiving it can be stigmatizing (Vangelisti, 2009). Even still, it seems that education about the relationship between social networks and mental health could be beneficial to society at large.

Discussion

Previous research has explained what constitutes supportive messages (Burlison & MacGeorge, 2002), how social support is commonly communicated (Goldsmith, 2004), and the benefits of seeking support via online social support groups (Wright & Bell, 2003). The general purpose of this study, however, is to extend what is known about online social support processes. We live in a world where an increasing number of people turn to online social networks to meet fundamental social needs and concomitantly the prevalence of depression among the general population continues to grow. Due to the stigma often associated with depression, however, many people who suffer from mental illness are reluctant to disclose their illness and/or directly seek support from people in their social worlds. Nonetheless, research indicates that people who suffer from depression commonly turn to virtual spaces for social connection and that is often pronounced for those who find it difficult to communicate about their lived experiences or socialize or face-to-face. But how do people in virtual spaces such as social networks respond to "friends" who exhibit behaviors (i.e., symptoms) associated with depression? And do social networks users have a sense of behavioral cues that might signal depression in a friend?

This study examines the ways people respond to behaviors commonly enacted by people suffering from depression such as high frequency of posts, sharing information about stressful life events, and communication that often contains negative affect. This study also explores people's awareness of online behavioral cues that could signal depression among their friends and how cognizance of such cues might affect social support processes. In doing so, this research primarily aims to present practitioners with data that will improve the lives of people suffering from depression and/or aid in depression prevention by articulating online social practices that may enhance and inhibit mental health. Additionally, this study hopes to extend what is known about conditions that stand to enhance and/or inhibit the provision of social support.

This study found that social network users respond to high frequency posting, sharing stressful life events, and negative affective communication by enacting support, curtailing communication, and establishing barriers between themselves and their online "friends." This study also found that social network users are not cognizant that people suffering from depression commonly enact the aforementioned behaviors. There are several practical implications and theoretical considerations that can be drawn from these findings.

First, the willingness of social network users to respond to friends' with social support was unambiguously qualified by frequency constraints. Like previous research, this study reveals a general willingness of individuals to provide support to others who are facing a stressful life event (Best et al., 2014; Cohen & Wills, 2005; High & Solomon, 2011; Wright & Bell, 2003). In the current study such support was most often reported as emotional and appraisal support, which have been reported as prevalent forms of support (Burlison & MacGeorge, 2002). However, data from this study is novel in that it indicates a kind of "support threshold" that exists for providing support in online social networks. While participants in this study reported providing support to people in their social networks in the past, they were also clear that providing ongoing social support for individuals who chronically communicate about stressful events online was not only untenable, but also undesirable. Simply put, social networks users reported being unmotivated and unwilling to provide ongoing support for "friends" who ostensibly could have benefited from recurrent support.

Additionally, participants in this study reported an aversion to friends who engage in frequent posts or posts that routinely contain negative affect, regardless of whether those friends were strong or weak ties. Not only did participants report a reluctance to engage with strong and weak ties who routinely posted negative feelings, but they noted a general dissatisfaction for any social tie who engaged in excessive posting of any kind. Previous research suggests that weak ties are excellent for the provision of online support because weak ties can often offer diverse points of view, feedback with greater objectivity, and, importantly, provide support without the risk of damaging close relationships (Rains & Young, 2009; Wright & Bell, 2003). However, previous studies have focused on online

social support groups (e.g., online groups for people dealing with a specific disease). The current study focuses on a general social network site (i.e., Facebook) in which users are likely to communicate with an amalgamation of both strong and weak ties simultaneously. Thus, it may be that the ongoing provision of social support is subject to socio-cultural expectations that underlie specific network functions. It may be that sociocultural norms associated with “open” online communication may outweigh idiosyncratic relationship norms that might otherwise compel a strong social tie to provide enduring support in such environments. This data suggests for practitioners as well as researchers that individuals in need of social support (e.g., individuals suffering from depression) may expect to find ongoing support when part of an online support group, but anticipating enduring support from “friends” on Facebook may not prove reliable irrespective of one’s social ties (i.e., strong or weak).

High and Solomon (2011) importantly note that online interaction *coexists* with face-to-face interaction as modes for giving as well as receiving support that is so significant to human health and wellbeing. The findings of this study emphasize the importance of this coexistence. As previously noted, due the ubiquity of new technologies and the widespread acceptance of online interaction, more and more people are turning to virtual communities to seek, provide, and/or receive social support (Moore & Craig, 2009). Accordingly, the results of this study accentuate the limitations of receiving social support via Facebook, particularly for people who may be prone to frequently posting about life stressors or negative feelings they may be experiencing. Participants in this study reported a willingness to offer social support to online social ties in sporadically or in acute situations. However, participants also noted that they engaged in strategic behaviors in order to curtail communication and, in some cases, establish barriers to communication altogether when confronted with “negative” friends. This not only emphasizes the importance of face-to-face social support for people suffering from mental illness, but also the significance of making strategic choices when seeking social support via social network sites. Practitioners might consider how the results of this study could be used to inform patient education and advise behavioral practices for the benefit of people suffering from depression or those simply in need of social support.

Limitations & Future Research

While this study answers the call for researchers to continue to focus on the relationship between social media and mental health outcomes, there are limitations to this study. Participants who took part in this study were routine users of social media, but the sample itself is rather homogenous in nature. The sampling procedure itself unnecessarily advantaged college students as participants due to the restriction of recruitment flyers to a university campus couple with secondary word-of-mouth snowball sampling. Though college students are among the most prolific users of social media, studies show that adults of all ages establish and maintain social connections online and the current study could have done a better job of reflecting this population. Word of mouth was incorporated and encouraged in recruiting procedures; however, this ultimately did not elicit participants other than college students. Furthermore, the sample was predominantly female and Caucasian. Although demographics of this nature are common in research studies of this ilk, such homogeneity restricts the applicability of the results to larger populations. Given the likelihood of encountering someone with depression online across the adult lifespan and the prevalence of depression across various ethnic groups, future studies of this kind might better serve researchers and health practitioners by improving the diversity of participants such that results could be more effectively generalized.

The procedure of this study could have also been extended to include examination of participants’ social network (i.e., Facebook) accounts. That is, the researcher could have attempted to capture data from the actual social network feeds of participants. Doing so may have confirmed the validity of the responses provided during the interviews themselves instead of relying solely upon cognitive and behavioral recall. That is, the researcher could have combined interview self-reports with online behavioral indicators in the data collection procedure. If a participant said that she “hid” a friend who routinely made posts containing negative affect, it would have been possible for the interviewer to confirm this fact had a more elaborate procedure been undertaken. It is possible that self-reports diverged (i.e., contained error) from actual behavior. However, the author of this study feels confident that interview responses were quite comprehensive given that answers to questions commonly included descriptions of behaviors that might frame participants in a negative light such as “ignoring” or “hiding” friends who appeared to be experiencing distress. Future studies might weigh the costs and benefits of combining interview data with

observed data in accordance with the goals of the study. In the current case interviews provided a rich source of data from which the posed research questions could be readily addressed.

Lastly, it should be noted that the goal in examining responses to common behavioral cues associated with depression in online social networks was to understand how social connections might ultimately enhance or inhibit mental health. That is, people often do not know whether people with whom they have social connections (i.e., relationships) are experiencing symptoms of depression or whether they have been formally diagnosed with depression. What's more, people often do not know how or whether their online action or inaction has a real impact on others. This "not knowing" was important to situating this study and these data. Given that mental health disorders are stigmatized and, as a result, often not communicated about openly and directly, the current study reflects a common state of "not knowing" that one might expect to encounter in a distal environment such as a social networking site. Quite simply, most people do not know the ever-changing health status of the majority of our social connections and this is particularly true when those health conditions carry social stigmas. Future studies might benefit from clinical contextualization such that researchers are able to examine symbolic exchange between actual persons suffering from depression and individuals in their online social networks.

Conclusion

It is evident that there is an amalgamation of factors that contribute to psychological health. From self-care to availability of information and access to healthcare to social support, the processes for successfully sustaining health and wellbeing are complex. As the number of people suffering from depression grows worldwide, researchers, theorists, and practitioners stand to make a significant impact in the lives of people struggling to manage their mental health. It is the hope of the current author that future studies will continue to explore these multifaceted processes until the risk of suffering or dying from depression or other mental health ailments is significantly diminished or eliminated.

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