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BEYOND THE GAME: AN EXPLORATORY STUDY OF VIRTUAL COMMUNITY, SELF-

DISCLOSURE, AND SOCIAL SUPPORT ON LIVE STREAMING PLATFORMS

by

Nicholas A Hemschemeyer

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ABSTRACT

BEYOND THE GAME: AN EXPLORATORY STUDY OF VIRTUAL COMMUNITY, SELF-
DISCLOSURE, AND SOCIAL SUPPORT ON LIVE STREAMING PLATFORMS

by

Nicholas A Hemschemeyer

The University of Wisconsin-Milwaukee, 2020
Under the Supervision of Professor Mike Allen

Research on live streaming platforms often investigates the motivations for the users viewing.

One motivation that is often found is a motivation of socialization however further research

should explore the socialization that occurs on live streaming platforms. This study examines the

socialization process in live streaming platforms such as *Twitch.TV* involving self-disclosure and

social support. A survey of 170 individuals asked about the use of live streaming platforms,

sense of virtual community, breadth of self-disclosure, and social support. Findings suggest that

individuals on live streaming platforms like other online networks build a sense of virtual

community. Findings reveal that users of live streaming platforms disclose about a variety

information including attitudes, work, body, and personality resulting in feelings of either

received informational or emotional support from other members within the live stream. Further

research into live streaming platforms may take in consideration the role of the individual within

the stream and frequency of disclosure.

Keywords: live streaming, self-disclosure, virtual community, social support

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Introduction:

More than a Game: An Exploratory study of Virtual Community, Self-Disclosure,

and Social Support on Live Streaming Platforms

Video games and the culture offer no undiscovered new frontier. Past research on video games has investigated video games in education and the benefits of playing games (Gee, 2003; Granic et al., 2013; Squire, 2003). Video games and their culture continue to grow while also becoming a part of contemporary society, with their emergence into mainstream media, as evidence by *ESPN, Disney XD*, and *ABC's* broadcasting of the Overwatch League (OWL) and *ESPN's* coverage of both the League of Legends spring split playoffs and the NBA 2k20 League and Player Tournament (Alexander, 2020; Fogel, 2019; Peters, 2020; Youngmisuk & Friedell, 2020). This acceptance into mainstream media continues to create exposure for video games and video gaming culture. While much research considers the entertainment aspects of video games, the unexplored part of the process remains the social aspect of the video game and live stream experience.

Currently, one of the most popular ways to interact with video game content involves the use of live streaming platforms. *Twitch.TV* (*Twitch*) emerges as one of the largest live streaming services on the internet, being noted as the most popular for Europe, North and South America, and western Asia (Olejniczak, 2015). Live streaming platforms like *Twitch* are unique as they offer their viewers an ability to watch a variety of content that goes beyond just video games; with *TwitchTracker* reporting a maximum of 6,059,527 and an average of 2,262,771 concurrent viewers and a total of 1,629,195,120 hours watched for the June 2020. While live streaming platforms such as *Twitch* offer their viewers a large variety of content, they also provide an opportunity to communicate with hundreds of other viewers in a synchronous environment.

Past research into *Twitch* investigates the live streaming platform as an entertainment platform, investigating why viewers watch streams (Gros et al., 2017; Hu et al., 2017; Sjoblom & Hamari, 2017), as well as the lives of *Twitch* streamers, such as their routine for streaming and ability to make it into a form of income (Johnson & Woodcock, 2019; Taylor, 2018). Research from Gros et al. (2017) notes socialization as a motivating factor for use of *Twitch*, also noting that this motivator requires further exploration. However, little research investigating the communication and socialization aspect of *Twitch* exists. *Twitch* with the affordances offered to users provides the potential for similar interactions comparable to online social networking sites. Two aspects of communication explored within online contexts incorporate elements of self-disclosure and social support.

Self-disclosure describes a process of revealing "any message about the self that a person communicates to another" (Wheeless & Grotz, 1976, p. 338). This focus of the definition identifies the importance of studying the motivations and the types of self-disclosure occurring in online settings. Social support provides a way for people to cope with life events, with people often seeking support for personal, physical, social or, mental situations (High & Solomon, 2011). Given the past research and understanding of self-disclosure and social support seeking behavior in online contexts such as social networking sites (SNS) advancing studies on self-disclosure and social support to a new online medium is needed. As Ruppel et al. (2016) note further research needs to be conducted when considering self-disclosure within face to face and computer mediated communication.

The current effort advances understanding of the role of self-disclosure communication within live streaming platforms such as *Twitch.* Live streaming has often been researched in terms of what motivations viewers have for watching which often have revealed socialization as

one of the motivations. Live streaming platforms offer users a sense of anonymity that many other online platforms do not, such as SNS (e.g. *Facebook*) in which your online community is made up of people that you have given access to whether that is because they are a family member, friend, or someone just allowed access – live streaming platforms allow users to send messages out to others without a closed community constraint, allowing anyone within the stream to be able to view the messages and information others are sending. This notion of perhaps unfamiliarity with other users in a stream provides an opportunity to advance research on self-disclosure and zero-history relationships, an area highlighted in Ruppel et al. (2016) meta-analysis. This study looks to build on past live streaming, sense of virtual community, self-disclosure, and social support research by conducting exploratory research within new emerging online platforms of live streaming such as Twitch.

Literature Review

Live Streaming

Motivations. Watching video games online has become an ever-emerging medium for learning about the game as well as watching high-level gameplay. However, the unique feature of video game live streams is the ability to interact with other members within the stream – viewers can interact with both the streamer and the viewers in a synchronous environment through chat features. Considering these new platforms, this offers a unique experience to viewers compared to traditional viewership of television or online videos in which interaction was not able to happen at all or would occur asynchronously in the form of video comments.

Research dives into these new platforms, with the most popular focus of study being *Twitch* arguably the largest live streaming platform at this point. Much of the research into live streaming platforms have investigated them as entertainment platforms. Studies have focused on

why viewers decide to watch others play games on live streams; past research has found that viewers have motivations to watch due to an appeal of a specific streamer, an interest in a particular game, entertainment, socialization, information (such as strategies), (Gandolfi, 2016; Gros et al., 2017). Hilvert-Bruce et al. (2018) investigated the social motivations for viewer engagement on *Twitch*, finding several motivators for viewer engagement within live streams including social interaction, sense of community, meeting new people, entertainment, information seeking, and external support.

Live streaming communication. Nascimento et al. (2014) through investigating the behavioral patterns of viewers created a formula to predict how many messages may be sent within a stream, but the context of the messages that may be sent is still unknown. Lessel et al. (2017) explore *Helpstone* "a tool which offers a set of novel communication channels on top of this game" referring to the popular turn-based card game *Hearthstone* (p. 1572). In the preliminary viewing before the experiment Lessel et al. (2017) found in three matches that seven viewers wrote 22 messages with none of the chat messages related to the game, later tracking showing that 18 out of 144 messages were game-related. Sjöblom et al. (2017) note in their study that "video game streaming enhances niche communities and retrieves an act of gameplay involving social interaction that was in decline" (p. 18). Hamilton et al. (2014) found while researching live streams as virtual third places that many streams focus on social engagement and community building.

Past studies note a social factor to viewing or engaging within a live stream such as motivators of information seeking, sense of community, and external support (Gandolfi, 2016; Gros et al., 2017; Hilvert-Bruce et al. 2018). While these past studies note and discover the social aspects of video game live streams the nature of social interaction is still relatively unexplored.

Lessel et al. (2017) found that some of the interactions were game-related, while they also found that several messages were unrelated to the game; Sjöblom et al. (2017) make a note about niche communities and the social aspects as well. A continued exploration of the results of the communication is needed from these initial findings.

Virtual Community

An important aspect to large groups of people is the idea of community – recently there has been an emergence of online communication technology that has allowed for the creation of virtual communities. Virtual communities "are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feelings, to form webs of personal relationships in cyberspace" (Rheingold, 2000, p. 6). Simply put virtual communities may emerge when a collection of people come together in a specific place online and begin to build a personal relationship. Virtual communities operate as "organic" or as a traditional emergent community (van Dijk, 1998). Pentina et al. (2008) note that they might be similar with members possessing shared goals, social interaction, a set of shared values and membership norms. Agostini and Mechant (2019) note that virtual communities are an aggregate of individuals and that the interactions amongst members is implemented by a common language and even at times a possible paralanguage.

Past research into virtual communities have revealed several reasons why individuals may seek out or join these communities. Individuals may join virtual communities due to the social support that the community may provide the individual as well as for the exchanging of information, and building of friendships while serving the groups common interests (Căciulan, 2013; Ridings & Gefen, 2004). Bowman-Grieve (2009) explored Stromfront a virtual community for the radical right noting a representation of a virtual community of practice, that

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the individuals have sought out this community to interact with one another. Finding that members pride themselves on the commitment to the community and the dialogue that occurs within the community. De Koster and Houtman (2008) find that members of Stormfront discuss feelings of a lack of freedom experienced offline and that this becomes a place of comfort for them that a sense of community exists receiving support and acceptance.

       Sense of Virtual Community. Blanchard and Markus (2002) argue for a sense of virtual community influenced by McMillan and Chavis (1986) who proposed a theoretical sense of community. McMillan and Chavis (1986) suggested sense of community as members having a feeling of belonging, that members matter to one another, and that member's needs will be met due to their commitment to each other. Traditional sense of community than functions within four dimensions feelings of membership, feelings of influence, integration and fulfillment of needs, and shared emotional connection in which Blanchard and Markus (2002) explore whether these apply to online communities as well arguing that to an extent they emerge within virtual communities. Roberts et al. (2002) found that while the community differed from a traditional face to face community, members still experienced a sense of community. Blanchard and Markus (2002) found that a sense of virtual community (SOVC) had developed within the group of study and that it looked similar to that of traditional sense of community, noting that the giving and receiving of support contributed to the sense of attachment members felt. The impact of support on SOVC also emerged within Blanchard (2008) study of online bulletin board members.

       Ridings and Gefen (2004) discover social support as an emerging factor into why people join a virtual community. Social support operates as a contributing factor to membership into and creating SOVC (Căciulan, 2013; De Koster & Houtman, 2008; Ridings & Gefen, 2004; Roberts

et al., 2002). While showing social support as an emerging factor Ridings and Gefen (2004) notes the need for further study into other types of virtual communities. Based on previous research into virtual communities as well as the emergence of social support being a contributing factor into SOVC a look into a new medium such as live streaming may build and result in similar findings as past research. As many streams are often referred to as a community further investigation into members SOVC within live streaming platforms may help advance our understanding of both virtual communities and SOVC.

Self-Disclosure

Self-disclosure refers to the act of revealing personal information about oneself to another person (Greene et al., 2006; Wheeless & Grotz, 1976). Regarding self-disclosure, verbal does not limit to just oral communication, however, also includes written forms of disclosure (Omarzu, 2000). Such self-disclosure may include personal information that in nature is descriptive, evaluative, or affective – "people can disclose facts about themselves, opinions and attitudes that they possess, or information about their moods and emotions" (Omarzu, 2000, p. 175).

With an understanding of what self-disclosure is past research and discussion about self-disclosure then have considered the type of relationship with those the person is disclosing information to such as friends, spouses, or parents (Greene et al., 2006). However research has also looked into self-disclosure in an online setting using social networking sites (SNS) acknowledging that certain SNS platforms may be made up of people who you are close to, those given access to, or those not known personally (Choi & Bazarova, 2015). Omori & Allen (2014) also note that SNS usages may be influenced by cultural norms regarding what may be posted and shared with your online friends. An exploration of other online platforms becomes recommended to create a better understanding of SNS use.

Self-disclosure research examines the goals of disclosing personal information to others. Bazarova & Choi (2014) found that members on *Facebook* disclosed for the goals of identity clarification, relational development, social validation, social control and resource, self-expression, information sharing, and entertainment. Omarzu's (2000) disclosure decision model looks at the assumption that individuals chose what, how, and to whom they are going to disclose information to influenced by the evaluation of rewards versus the risks; potential motivations for doing such are social approval, intimacy, relief of distress, social control, and identity clarification being influenced by Derlega and Grzelak's (1979) functional theory. Other motivations for self-disclosure may be self-presentation, relationship management, keeping up with trends, information storage and sharing, entertainment, and showing off (Lee et al., 2008). Lastly, SNS users may turn to the sites when they feel lonely – as loneliness usually implies a lack of social skills in offline contexts, they may then rely on online settings to compensate for unsuccessful offline relationships (Lee et al., 2013). However, while potential positive effects of online self-disclosure exist there are potential risks as well. Hatfield (1984) discusses potential fears of self-disclosure being fear of exposure, abandonment, angry attacks, loss of control, destructive impulses, losing one's individuality. Fears of self-disclosure are especially important to consider when understating that information revealed in online settings such as SNS may be accessible to all people across time and space (Zillich & Muller, 2019).

Self-disclosure research within SNS has often looked at *Facebook* as the medium of choice for users however it is important to acknowledge the other SNS, Choi & Bazarova (2014) found that people were "most concerned about their privacy on *Facebook*, followed by public *Twitter*, and then protected *Twitter*" (p. 493). They found that self-disclosure motivated by relational development occurred more on SNS with more defined privacy boundaries such as

Facebook or a protected *Twitter* account and that then disclosures motivated by social validation were more likely to occur on a public *Twitter* account than on a *Facebook*. *Facebook* users that are more extraverted and used the SNS for establishing a virtual community disclose more personal information while users who are lower in self-esteem, neuroticism, and more open post abut a wider variety of topics (Hollenbaugh & Ferris, 2014).

Social Support

Social support allows people to cope with events and situations that may arise within their lives, often individuals will seek support from others for personal, physical, social, or mental situations (High & Solomon, 2011). Social support emerges in several different forms; emotional support, often defined as an addressing of an emotional state of the seeker (High & Solomon, 2011), informational support defined as looking to provide information to help people in situations they are in (Wright & Webb, 2011) and tangible often defined as "giving practical, material aid, which allows distressed people to concentrate on more troubling aspects of their lives" (Wright & Webb, 2011, p. 121). With this social support is often thought of as having two basic elements, having someone or some group available in which one can turn to in times of need and a degree of satisfaction with the available support (Levine & Sarason, n.d.).

Social support thus than has been noted as an occurrence of certain online settings such as within social groups. When considering social media users, Oh and Syn (2015) found that "social media users who would like to share information and social support are highly motivated by learning with an expectation that they can receive new or updated information by exchanging information with others" (p. 2055). Social media users become motivated to select social media in the same manner as individuals that share videos on *YouTube* receive some informational or social support benefit as opposed to persons sharing photos on *Flickr* motivated by having fun

(Oh & Syn, 2015). SNS such as *Facebook* has also been found to be used for parenting purposes as a way to seek out support such as informational support, as well as by individuals who are lonely and have low social support systems (Haslam et al., 2017; Song et al., 2014).

Support of social support in online settings has been found outside of the use of social networking sites as well such as the participants in Shaw and Gant (2002) chatting anonymously on the internet decreased loneliness and depression as well as increasing perceptions of social support. Video games offer the ability to play and communicate with persons not easily accessible at that moment due to location or time. Trepte et al. (2012) researching social support and playing games within a clan found promotion of gamers' offline contacts to other clan members and providing an additional source of social support.

Based on previous research within social support as well as virtual communities indicating that individuals will seek out specific online networks to specifically receive support or receive it as a factor of being in that environment such as Trepte et al. (2012) the ability for similar emergence is possible within live streaming. As Shaw and Grant (2002) indicate chatting online anonymously decreased loneliness while also increasing perceptions of support, live streaming platforms offer their users a similar affordance of anonymous chat. When looking at affordances of SNS such as selective sharing and individual selection of platforms the possibility for findings within live streaming may emerge.

Hyperpersonal Model

Walther (1996) presented a new model for computer mediated communication (CMC). The Hyperpersonal Model makes for an argument that CMC may facilitate greater desired levels of interaction as compared to face to face (FtF) communication. The interactions of the sender, receiver, channel, and feedback of individuals through the affordances of CMC such as

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nonverbal cues and controllability for the user in which the Hyperpersonal Model can occur. Walther (1996) makes the argument that CMC has surpassed the level of affection and emotion of FtF interaction. Walther (2007) notes that as senders CMC "users selectively self-present, revealing attitudes and aspects of the self in a controlled and socially desirable fashion" (p. 2539). The use of CMC in provides opportunities of editing, discretion, selective self-presentation, idealization, and reciprocation. Through the affordances provided by CMC, the Hyperpesonal Model posits that individual users of a CMC will take advantage of and go beyond the characteristics and interface of the selected channel to enhance relational outcomes.

The Hyperpersonal Model notes that individuals will take advantage of the affordances of CMC such as the ability to take time to craft messages and editing them as confirmed by Walther (2007) who found individuals would take the time to craft messages and change structure based on who they believed to be communicating with as allowed by the CMC channel. Gonzales and Hancock (2011) found that the affordance of selective self-presentation offered by CMC can have a positive influence on an individual's self-esteem, supporting Walther's Hyperpersonal Model in suggesting that online communication will allow for selective self-presentation due to increased time of being able to do so. Dulther (2006) focused on the ability for a user to facilitate more politeness strategies while using email for requests compared to voicemail. Dulther found that indeed email facilitates the use of more politeness strategies as well as that the messages sent over the CMC of email allowed for users to employ a greater number of phrases when making the requests. These findings again support the Hyperpersonal Model suggestion of CMC allowing the user to employ larger amounts of editing to be done to a message due to the lack of FtF verbal and nonverbal cues. Dulther (2006) also points out that these findings may not apply to a synchronous text-based CMC and that further study into such mediums should be conducted.

The Hyperpersonal Model may also allow for an individual to create opportunities for self-disclosure due to the affordances of CMC and the possibility to facilitate greater interaction than FtF channels. However, there has been a lack of support from research suggesting so (Kim & Dindia, 2011; Ruppel et al., 2016)

Considering the ability for self-presentation especially within SNS such as the use of *Facebook* on self-esteem in Gonzales and Hancock (2011) other affordances besides text should be considered. Many of the current CMC allows for individuals to use a combination of text and emoji's or "popular digital pictograms that can appear in text messages, emails, and on social media platforms" too communicate (Stark & Crawford, 2015). Live streaming platforms such as *Twitch* employee a large use of both text and specialized emojis to the platforms themselves. This may allow for individuals of such platforms to communicate about more topics as well as be more selective in the way they present themselves and information about themselves.

H1: Increase in SOVC predicts breadth of SD

H2: Increased breadth of SD predicts increased feelings of both Informational and Emotional support

H3: Increases in SD (attitudes, opinions, work) predict greater informational support

H4: Increases in SD (personality, body) predict greater emotional support

Methodology

Participants & Procedures

Participants after approval from the Institutional Review Board were recruited using Amazon Mechanical Turk (MTurk). The use of this platform allowed for diversity in terms of age, gender, location, and platforms used. To be eligible for study the requirement of being at

least 18 years old, a U. S. citizen and prior use of at least one of the platforms being studied. A priori power analysis was conducted to detect a moderate effect size ($r = .30$). The power analysis resulted in a desired sample size of 134 participants. Those participating in the study received $0.50 USD as compensation for participation. The $0.50 USD was based on MTurk worker's expected hourly wage (Mason & Suri, 2012). Complete copy of the questionnaire appears in the appendix.

363 people total entered the survey. 28 people entered the survey but did not complete the screening questions. 114 people did not satisfy the screening questions. 16 people were removed from the study due to incomplete data. 35 people were rejected for failure to meet the minimum time requirement and/or did not correctly answer the attention checks. The final sample size was 170.

Of the 170 survey participants 102 identified themselves as male, 63 as female, 1 as gender identity not listed and 4 did not indicate a gender identity. 125 participants identified as White/Caucasian, 12 as Black/African American, 16 as Asian, 10 as Hispanic/Latino, 4 as Biracial/Multiracial, 1 as other, and 2 did not identify an ethnicity. For participants age 36 indicated they were between the age of 20-29, 59 between the ages of 30-39, 33 between the ages of 40-49, 21 between the ages of 50-59, 14 between the ages of 60-69, 4 between the ages of 70-79, and 3 did not indicate an age.

Measures

All measures were based on a 7-point Likert scale. All measures were scored such that a higher score indicates more of the variable. For example, a participant who scores seven on CT usage uses more CT than a participant who scored two. Descriptive statistics were calculated and are reported in Table 1.

CT Usage. 1 item was created to measure how much participants use live streaming services (eg. *Twitch.TV, Mixr, Facebook Live, YouTube Live*). Responses are based on a 7-point Likert scale (7 = more than 6 hours, 1 = not at all). Participants that answer not at all will be screened out of the questionnaire due to not meeting the criteria of being a live stream user.

Sense of Virtual Community. Sense of virtual community (SOVC) scale from Blanchard (2007) is to be adapted for this study. The original scale was a 4-point Likert scale the current study adapted the measure to a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) to be balanced with the other measures in the study.

Self-Disclosure. The original Jourard and Laskow's (1958) self-disclosure scale includes six sub-scales each with ten items on a three-point Likert type scale with a fourth option included to indicate the participant had lied about the item. To reduce the chance of participant fatigue I picked five items from 4 sub-scales (attitudes and opinions, work or studies, personality, and body). To the best of my knowledge, the scale has not been tested via factor analysis. Thus, I choose what I thought were the five most related items for the underlying construct.

Social Support. The informational and emotional online support scales from Nick et al (2018) are to be adapted for this study. The original scale was a 5-point Likert scale the current study adapted the measure to a 7-point Likert scale (1 = never, 7 = very frequently) to be balanced to the other measures included in the study. The original informational and emotional scale consisted of 10 items each, however the current study uses 5 items each to reduce participant fatigue. The informational support measure includes 5 items such as "people provide me with helpful information". The emotional support measure includes 5 items such as "people say or send me things that make me feel good about myself".

Results

To test H1, that increased sense of virtual community (SOVC) predicts the breadth of self-disclosure, a bivariate correlation was conducted. Analysis revealed a significant positive relationship between SOVC and breadth of self-disclosure, r (155) = .28, p < .001. Thus, H1 received support. SOVC increases by 1 breadth of self-disclosure by .28, and vice versa.

Two bivariate correlations assessed H2, examining whether increased breadth of self-disclosure predicts increased feelings of both informational and emotional social support. The first analysis revealed significant positive relationship between breadth of self-disclosure and feelings of informational social support, r (160) = .33, p < .001. Breadth of self-disclosure increases by 1 and feelings of informational social support by .33, and vice versa. The second analysis revealed significant positive relationship between breadth of self-disclosure and feelings of emotional social support, r (160) = .40, p < .001. Breadth of self-disclosure increases by 1 and feelings of emotional social support by .40, and vice versa. Thus, H2 was supported.

To test H3, that increases in self-disclosure (attitudes and work) predicts greater feelings of informational social support two bivariate correlations was conducted. The first analysis revealed significant positive relationship between self-disclosure (attitudes) and feelings of informational social support, r (166) = .27, p < .001. Breadth of self-disclosure about the individual's attitudes increases by 1 and feelings of informational support by .27, and vice versa. The second analysis revealed significant positive relationship between self-disclosure (work) and feelings of informational social support, r (165) = .41, p < .001. Breadth of self-disclosure about the individual's work increases by 1 and feelings of informational support by .41, and vice versa. Thus, H3 was supported. Comparison of the two correlations reveal z = 1.46, p = .07 that the two correlations are not significantly different from each other.

H4, predicts that increases in self-disclosure (personality and body) predicts greater feelings of emotional social support became tested using two bivariate correlations. The first analysis revealed significant moderate positive relationship between self-disclosure (personality) and feelings of emotional social support, r (165) = .41, p < .001. Breadth of self-disclosure about the individual's personality increases by 1 and feelings of emotional social support by .41, and vice versa. The second analysis revealed significant positive relationship between self-disclosure (body) and feelings of emotional social support, r (165) = .29, p < .001. Breadth of self-disclosure about the individual's body increases by 1 and feelings of emotional social support by .29, and vice versa. Thus, H4 was supported.

Discussion

The current study investigated four hypotheses to further understanding of self-disclosure and social support within online platforms. The study investigated the increasingly popular live streaming platforms to discover whether users of live streaming websites received social support similar. The first hypothesis of study investigated the connection between increases in sense of virtual community and the relationship to breadth of self-disclosure. The measure of SD involves the perception of the breadth across four domains of content, as such the issue is perception of breadth rather than some absolute measure. The results showed a positive relationship between the two. These results investigating breadth of self-disclosure, confirm similar findings from Hollenbaugh and Ferris (2014) that found when researching popular SNS Facebook that extraversion and virtual community were direct predictors of depth of self-disclosure; those who feel a sense of virtual community within online platforms are likely to disclose more about themselves.

H2 investigated the connection between breadth of self-disclosure and the individual's feelings of social support specifically informational and emotional support. While items within Blanchard (2007) SOVC scale may be similar to items of social support there are distinct differences in the items of each scale; scales on social support indicate that the individual feels the have received something such as encouragement or direct information where as SOVC scale remains fluid in the sense of asking if you feel there is support offered. The results of the analysis for H2 then indicate a positive relationship between both self-disclosure and feelings of social support amongst users of live streaming platforms. These results confirm findings on self-disclosure and social support from studies on SNS (Lee et al., 2013).

Regarding the third hypothesis there again was a positive relationship found between the variables. The third hypothesis however investigated the type of self-disclosure and the feelings of informational support received. Live streaming platform users indicate that they receive stronger feelings of informational support when they disclose about their work. While indicating feelings of informational support for both disclosure about attitudes and work the stronger indication with work may help explain a further connection between the type of disclosure and the feeling of support received. Discussions about work may also lend themselves to be a more frequent conversation piece within these platforms – since frequency of disclosure was not explored in this study further research should look into the frequency of disclosure and the assumed feelings of support received within live streaming platforms.

Implications

Theoretical. Walther's (1996) hyperpersonal model suggests that CMC can facilitate greater levels of interaction compared to classic FtF communication. Schouten et al. (2007) found instant messaging allows for increased self-disclosure due to lack of nonverbal cues and it's

controllability as a communication medium. The results from the study at hand point in a similar conclusion. Livestreaming platforms allow for their audiences to have the opportunity to control what they disclose without the pressures of FtF communication. Considering the main facet of communication within live streaming platforms being a text-based chat the users can control the communication that they participate in. Walther believed that CMC allowed for users to have the opportunity for selective self-presentation and when considering live streaming platforms from the viewer's point of view the platforms and findings of the study would make the same argument. With users communicating strictly over chat, there are no physical appearance or nonverbal cues. The process permits the participant an opportunity to take time to decide what and how to disclose personal information. This time allowed for users to decide on what to share especially over platforms with no physical cues allows the users to consider reciprocity; considering if what they disclose to the other users of the platform makes it likely or not that they other users will also disclose information (Ruppel et al., 2016).

Practical. The study allows for future research as well as individuals to begin to create a larger understanding of the live streaming medium. As live streaming begins to become a greater part of society with more platforms creating and even at times shutting down for bigger competitors (e.g. *Justin.TV* setting the way for *Twitch)* understanding of not just the uses but also the communication that occurs is needed. This study has thus begun to bridge some of the gaps between this new medium with prior research on self-disclosure and social support. As many of these platforms describe their viewer bases as communities the results of the study do indicate that there is a sense of virtual community that occur within these platforms.

Considering this idea of community that members feel when interacting within live streams future directions of understanding their impacts on other aspects of individuals lives is a

possibility. Song et al. (2014) conducted a meta-analysis on *Facebook* and loneliness indicating that those who are lonely and have low social support networks may turn to SNS like *Facebook* the indications of SOVC and perceived social support of this study would direct us to believe that individuals may use live streaming communities for similar reasons.

Limitations

Limitations of this study come within the data set and the participant pool for the study. The first limitation of the study to acknowledge is the participant pool – understanding live streaming platforms and the types of people that are within a stream the need to acknowledge roles should be within future research. Knowing that someone may take the questionnaire for the study as either a streamer or a viewer may differentiate in the breadth of disclosure and the feelings of social support. While these roles do not limit the study in such a way that the results are not significant, future research should look and consider different roles of people within the live stream. Other roles to consider also include lurkers and moderators.

Considering now roles and the data set for the study a limitation to acknowledge comes within the data for self-disclosure as well as social support. Self-disclosure investigated specifically the breadth and disclosures about the individual's attitudes, work, personality, and body; a component to consider that may directly impact feelings of social support as well as virtual community even is the frequency of self-disclosure. Regarding social support the current study investigated only informational and emotional support however considering the roles discussed above if a streamer participated in the study there is possibility that from any of the types of disclosure could have received tangible support in the form of money. Future research should consider the roles of the individuals and expand on both self-disclosure and social support.

Future Research. Future research into live streaming platforms such as *Twitch* should continue to explore the aspect of community within the platforms. As much of the research focus has investigated live streaming in terms of user engagement and motivations of watching the stream or streamer (Hu et al., 2017; Sjoblom & Hamari, 2017), room to explore it as a community platform remains. This study begins to advance prior research on virtual communities which have used platforms of traditional SNS such as *Facebook,* online groups such as Multiple Sport Newsgroup (MSN), as well as online bulletin board groups (Blanchard & Markus, 2002; Ridings & Gefen, 2004).

Further research benefits from a focus on investigating the actual communication that occurs within live streaming platforms. While this study begins to investigate self-disclosure and feelings of social support that occurs on live streaming platforms there exists still much room to continue the research. As research into communication that occurs is lacking as a whole considering live streaming platforms as a communicative medium a greater look into self-disclosure should occur – this should include not only breadth which has been investigated within this particular study but also the frequency of self-disclosure. Some components to consider alongside of self-disclosure on these platforms involves the relationships amongst the users; while the current study looks at sense of community this can be further explored. Considering that one of the key components of self-disclosure is relationship building further investigation into the relationships and feelings of relationships between viewer and streamer, streamer and viewer, and viewer to viewer should be researched.

Conclusion

As video games and live streaming continue to grow within today's society an understanding of their impacts within our lives becomes more and more prevalent. As past

research has looked into the motivations of usage one emerging factor is socialization (Gandolfi, 2016; Gros et al., 2017; Hilvert-Bruce et al., 2018). The current study begins to conduct exploratory research within live streaming and socialization specifically self-disclosure and social support. Results of the study indicate that live streaming platforms create a sense of virtual community for the individuals allowing for them to feel comfortable with a breadth of self-disclosure resulting then in feelings of received social support. The findings emerge that disclosure about attitudes and work result in greater feelings of informational support while disclosure about body and personality result in greater feelings of emotional support. While being exploratory in nature the current study begins to create a basic understanding of some of the socialization factors that may emerge within live stream communities beyond just entertainment.

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<center>**Appendix A**</center>

University of Wisconsin-Milwaukee
Informed Consent to Participate in Research
Study title: Communication Technology

Researcher[s]: Nicholas Hemschemeyer (SPI) and Dr. Mike Allen (PI)
We're inviting you to take a survey for research. This survey is completely voluntary. There are no negative consequences if you don't want to take it. If you start the survey, you can always change your mind and stop at any time.

What is the purpose of this study?
We want to understand users of video game live streaming websites and their feelings of perceived social support.

What will I do?
This survey will ask questions on feelings of virtual community, self-disclosure, and feelings of social support. It includes questions about how much you disclose about your attitudes and opinions, work, personality, and body. The survey will take about 10 minutes.

Risks
·   Some questions may be personal or upsetting. You can skip them or quit the survey at any time.
·   Online data being hacked or intercepted: Anytime you share information online there are risks. We're using a secure system to collect this data, but we can't completely eliminate this risk.
·   Amazon could link your worker ID (and associated personal information) with your survey responses. Make sure you have read Amazon's MTurk participant and privacy agreements to understand how your personal information may be used or disclosed.
·   Breach of confidentiality: There is a chance your data could be seen by someone who shouldn't have access to it. We're minimizing this risk in the following ways:
o   Data is de-identified
o   We'll store all electronic data on a password-protected, encrypted computer.

Possible benefits: Individuals benefits may include, but, are not limited to, helping gain an understanding of video game live streaming services to seek and receive social support. Societal benefits may include, but are not limited to Findings have potential to benefit users of live streaming websites to better understand the use of them to seek social support.

Estimated number of participants: 200 MTurk workers

How long will it take? The survey will take about 10 minutes.

Costs: None

<center>30</center>

Compensation: You will be paid $0.50 for participating. However, this HIT is periodically re-posted. If you've already completed this HIT previously, please do not complete it a second time. You will not be compensated a second time. Additionally, the study includes quality control measures (e.g., attention check questions) and a minimum of 2 minutes to complete. If your work is shown to be poor quality or you failed multiple attention checks questions your work will be REJECTED.

Work is approved at minimum 5 days after submission. This is to validate your work against our quality control measures.

Future research: Data will not be retained for future.

Confidentiality and Data Security: We'll collect your worker ID; this information is necessary so that you can receive compensation.

Where will data be stored?
On the researcher's computer and the on the servers for the online survey software (Qualtrics).

How long will it be kept? 06/15/2021

Who can see my data?
·   We (the researchers) will have access to coded data based on your worker ID. Your worker ID will be removed after used for compensation and removed before analyzing the data. This is so we can analyze the data and conduct the study.
·   Agencies that enforce legal and ethical guidelines, such as
   • The Institutional Review Board (IRB) at UWM
   • The Office for Human Research Protections (OHRP)
·   We may share our findings in publications or presentations. If we do, the results will be aggregate (grouped) data, with no individual results. If we quote you, we'll use pseudonyms (fake names).
·   Amazon: Because they own the MTurk internal software, and to issue payment, Amazon will have access to your MTurk worker ID. There is a possibility Amazon could link your worker ID (and associated personal information) with your survey responses.

Questions about the research, complaints, or problems: Contact Nicholas (hemsche3@uwm.edu)

Questions about your rights as a research participant, complaints, or problems: Contact the UWM IRB (Institutional Review Board) at 414-229-3173 / irbinfo@uwm.edu.

Please print or save this screen if you want to be able to access the information later.
IRB #: 20.376
IRB Approval Date: July 1, 2020

Agreement to Participate

Your participation is completely voluntary, and you can withdraw at any time.

To take this survey, you must be:

- At least 18 years old
- Able to read English
- Prior usage of Video Game Live Streaming Websites (e.g., Twitch.TV, Mixer.com, YouTube Live, Facebook Gaming)
- Currently in the United States

Appendix B

Screening Questions:

Q3: Do you currently use live streaming platforms such as *Twitch.TV, Mixer, Facebook Gaming* and *YouTube Live?*
- No
- Yes

Q4: Please select all the platforms that you currently use
- None
- Twitch
- Mixer
- Facebook Gaming
- YouTube Live

Live streaming:

How often do you watch live streams or stream in a day such as on *Twitch*.TV, *Mixer*, *Facebook* Gaming and *YouTube* Live?
- More than 6 hours (7)
- 5-6 hours (6)
- 4-5 hours (5)
- 2-3 hours (4)
- 1-2 hours (3)
- Less than 1 hour a day (2)
- Not at all (1)

Blanchard (2007) Sense of Virtual Community Measure (SOVC)
1. I think this group is a good place for me to be a member
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
2. Other members and I want the same thing from the group
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
3. I can recognize the names of most members in this group
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
4. I feel at home in this group
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
5. I care about what other group members think of my actions
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
6. It is very important to me to be a member of this group
   a. Strongly Agree (7)

b. Agree (6)
c. Somewhat agree (5)
d. Neutral (4)
e. Somewhat Disagree (3)
f. Disagree (2)
g. Strongly Disagree (1)
7. I expect to stay in this group for a long time
    a. Strongly Agree (7)
    b. Agree (6)
    c. Somewhat agree (5)
    d. Neutral (4)
    e. Somewhat Disagree (3)
    f. Disagree (2)
    g. Strongly Disagree (1)
8. I anticipate how some members will react to certain questions or issues in this group
    a. Strongly Agree (7)
    b. Agree (6)
    c. Somewhat agree (5)
    d. Neutral (4)
    e. Somewhat Disagree (3)
    f. Disagree (2)
    g. Strongly Disagree (1)
9. I get a lot out of being in this group
    a. Strongly Agree (7)
    b. Agree (6)
    c. Somewhat agree (5)
    d. Neutral (4)
    e. Somewhat Disagree (3)
    f. Disagree (2)
    g. Strongly Disagree (1)
10. I've had questions that have been answered by this group
    a. Strongly Agree (7)
    b. Agree (6)
    c. Somewhat agree (5)
    d. Neutral (4)
    e. Somewhat Disagree (3)
    f. Disagree (2)
    g. Strongly Disagree (1)
11. I've gotten support from this group
    a. Strongly Agree (7)
    b. Agree (6)
    c. Somewhat agree (5)
    d. Neutral (4)
    e. Somewhat Disagree (3)
    f. Disagree (2)
    g. Strongly Disagree (1)

12. Some members of this group have friendships with each other
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
13. I have friends in this group
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
14. Some members of this group can be counted on to help others
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
15. I feel obligated to help others in this group
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
16. I really like this group
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)
   f. Disagree (2)
   g. Strongly Disagree (1)
17. This group means a lot to me
   a. Strongly Agree (7)
   b. Agree (6)
   c. Somewhat agree (5)
   d. Neutral (4)
   e. Somewhat Disagree (3)

f. Disagree (2)

g. Strongly Disagree (1)

Jourard (1958) Self Disclosure Scale

[Attitudes and Opinions]

1. What I think and feel about religion
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
2. My personal opinions and feelings about other religious groups other than my own
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
3. My personal views on drinking
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
4. My personal views on sexual morality – how I feel that I and others ought to behave in sexual matters
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)

5. My personal standards in a partner – what I consider to be attractive
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)

[Work (or Studies)]
1. What I find to be the worst pressures and strains in my work
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
2. What I feel are my shortcomings and handicaps that prevent me from working as I'd like to, or that prevent me from getting further ahead in my work
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (2)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
3. How I feel about the choice of career that I have made – whether or not I'm satisfied with it
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
4. How I feel that my work is appreciated by others

a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
b. (6)
c. (5)
d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
e. (3)
f. (2)
g. Have told the other person nothing about this aspect of me (1)

5. My ambitions and goals in my work
   a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
   b. (6)
   c. (5)
   d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
   e. (3)
   f. (2)
   g. Have told the other person nothing about this aspect of me (1)

[Personality]
1. The aspects of my personality that I dislike worry about, that I regard as a handicap to me
   a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
   b. (6)
   c. (5)
   d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
   e. (3)
   f. (2)
   g. Have told the other person nothing about this aspect of me (1)
2. Whether or not I feel that I am attractive to the opposite sex; my problems, if any, about getting favorable attention from the opposite sex.
   a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
   b. (6)
   c. (5)
   d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
   e. (3)
   f. (2)
   g. Have told the other person nothing about this aspect of me (1)
3. What it takes to get me feeling real depressed and blue
   a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
   b. (6)

      c. (5)

      d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)

      e. (3)

      f. (2)

      g. Have told the other person nothing about this aspect of me (1)

4. The kinds of things that make me especially proud of myself, elated, full of self-esteem or self-respect

      a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)

      b. (6)

      c. (5)

      d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)

      e. (3)

      f. (2)

      g. Have told the other person nothing about this aspect of me (1)

5. The kinds of things that make me furious

      a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)

      b. (6)

      c. (5)

      d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)

      e. (3)

      f. (2)

      g. Have told the other person nothing about this aspect of me (1)

[Body]

1. How I wish I looked

      a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)

      b. (6)

      c. (5)

      d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)

      e. (3)

      f. (2)

      g. Have told the other person nothing about this aspect of me (1)

2. My feelings about different parts of my body

      a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)

      b. (6)

      c. (5)

      d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)

e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
3. Any problems and worries that I had with my appearance in the past
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
4. Whether or not I have any health problems
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)
5. My feelings about my adequacy in sexual behavior
    a. Have talked in full and complete detail about this item to the other person. They know fully in this respect and could describe me accurately (7)
    b. (6)
    c. (5)
    d. Have talked in general terms about this item. The other person has only a general idea about this aspect of me (4)
    e. (3)
    f. (2)
    g. Have told the other person nothing about this aspect of me (1)

Nick et al. (2018) Online Social Support Scale

[informational scale]
1. When I'm online, people give me useful advice
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
2. Online, people provide me with helpful information
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
3. If I had a problem, people would help me online by saying what they would do
   a. - - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
   h. People offer suggestions to me online
   i. - Very Frequently (7)
   j. - Frequently (6)
   k. - Occasionally (5)
   l. - Unsure (4)
   m. - Rarely (3)
   n. - Very Rarely (2)
   o. - Never (1)
4. People help me see things in new ways when I'm online
   a. - - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)

g. - Never (1)

[emotional scale]

1. Online, people say or do things that make me feel good about myself
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
2. People encourage me when I'm online
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
3. When I'm online people tell me they like the things I say or do
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
4. People show they care about me when I'm online
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)
5. I get positive comments online
   a. - Very Frequently (7)
   b. - Frequently (6)
   c. - Occasionally (5)
   d. - Unsure (4)
   e. - Rarely (3)
   f. - Very Rarely (2)
   g. - Never (1)

Demographics:
   Age:

Biological Sex:
Ethnicity:
Education Level:
Income Level:

Appendix C

Tables

Variable	M (SD)	1	2	3	4	5	6	7	8
1. SOVC	87.42 (19.24)	.96							
2. OverallSD	58.39 (30.78)	.28***	.96						
3. InfoSS	23.34 (6.66)	.62***	.33***	.94					
4. EmotSS	23.01 (6.93)	.60***	.40***	.86***	.92				
5. SDatt	14.91 (9.03)	.28***	.91***	.27***	.38***	.97			
6. SDwork	16.48 (8.64)	.36***	.91***	.41***	.45***	.80***	.90		
7. SDpersonality	15.07 (8.00)	.31***	.95***	.36***	.40***	.80***	.85***	.93	
8. SDbody	12.79 (8.43)	.20**	.91***	.22***	.30***	.78***	.74***	.86***	.91

$* = < .05, ** = < .01, *** = < .001$