

Communication and the Maintenance of Relationships During The COVID-19 Pandemic

Alyssa Nerland¹, Baila Lovejoy¹, Christina Doan^{1*}, Jordan Graber^{1*}, and Kirsten Hutt¹

Abstract

Communication is foundational to relationship maintenance. Humans have long relied on the body as a source of communicative interaction, and now must adhere to new ways of being due to the COVID-19 pandemic. This research focuses on the impacts on communication put in place by new pandemic-related restrictions, in addition to adaptive measures utilized by participants within peer and romantic relationships. 75 McMaster students completed an online, anonymous survey outlining communicative processes before and after the pandemic, newfound methods of communication, and any associated influences on the individual. The research finds that the COVID-19 pandemic has negatively impacted styles of communication, and despite finding new ways to remain connected, participants still experienced significant levels of social disconnectedness. This research may be used to further the understanding of how negative circumstances, such as the COVID-19 pandemic, may impact relationship quality and inform any future intervention strategies that could mitigate these effects.

Introduction

The topic that we have chosen to address concerns the ways in which the COVID-19 pandemic has impacted communication in both peer and romantic relationships. This topic is of interest to us because of our unique experiences throughout this time, and the curiosity surrounding how others' relationships have been affected by the changing circumstances. Alongside ever-changing restrictions comes new expectations of individuals concerning their proximity to those around them. We are interested in learning how people understand and navigate these new expectations, how their routines have adapted, or perhaps deteriorated, and most importantly, how these new safety guidelines have changed how people communicate and the effects this has on relationship quality. We argue that studying individuals during major world events is important to the understanding of human interactions as changing circumstances show the process of unique socialization in its purest form. We conducted our study using the research question: How has the COVID-19 pandemic impacted communication, and as a result, peer and romantic relationships?

¹ Undergraduate Student, Honours Social Psychology Program, Faculty of Social Sciences, McMaster University, Hamilton, Ontario, Canada.

* While we both serve on the editorial board for the journal, there are no conflicts of interest in publication as all grading and final selection of papers eligible for publication were conducted at arms-length, with Dr. Clancy evaluating all final thesis papers and independently contacting the groups who were eligible for publication.

This paper will begin with a comprehensive review of literature that will give context to our research endeavours, as well as explain why the study of this topic is so relevant and important. Second, we will identify theoretical frameworks utilized in the examination of data. This will include both prominent theorists and their corresponding theories that will connect to the research in question. Third, we provide an in-depth review of our methodology, explaining each step of the research process to obtain our final set of data. Following this, the ethical risks of the study and the possible challenges we are anticipating will be outlined and explained further. Sixth, we will present the major findings from our collected data. Seventh, we provide a discussion of the limitations that the study faces, and the insights that we predict will be provided by the outcomes of this study. Lastly, we provide a summary and conclusion, along with the completed ethics protocol.

Literature Review

The subject of communication and its resulting impacts on relationships is complex. Prior research that focuses specifically on the interactions of communication, relationships and the COVID-19 pandemic are few in number. This is comprehensible, considering we intend to study an issue which has so recently unfolded. The work that does exist varies in context, geography, and field of study. Below is a thematic breakdown of literature that we will use to inform our research endeavours, focusing on the following concepts: relationships, communication, adaptation, and digital communication and its implications.

Relationships

One of the central ideas to this research is the concept of relationships. Throughout the literature, researchers understand that social relationships develop in many contexts and situations and in many different ways. Licoppe (2004, p. 9) defines a relationship as something that “stretches over a period of time that exceeds individual interactions”. Licoppe (2004) further states how interactionist and constructivist models address relationships in terms of the sequence of organized interactions. These exchanges re-establish and reinforce social connection between individuals (Licoppe, 2004). These operationalizations of relationships can inform how our team understands the changes in relationship maintenance, by determining how and why relationships are maintained, and how alterations to that system impact individual and social levels of communication.

Some research has been conducted on the connections between the COVID-19 pandemic and relationships. Much of this research addresses the contextual circumstances that influence how romantic relationships are maintained. Pietromonaco and Overall (2020) applied a framework of relationship science to the current pandemic to determine how romantic relationships might be influenced. By utilizing theoretical frameworks, they analyzed past stressors and their impact on the adaptive behaviours of couples (Pietromonaco & Overall, 2020). They additionally examined how this challenged their relationships on deeper levels throughout the pandemic (Pietromonaco & Overall, 2020). Healthy relationships involved the recognition of needs and constructive problem solving (Pietromonaco & Overall, 2020). They found that external stressors, such as work or economic hardship, had the ability to undermine these healthy relationship processes (Pietromonaco & Overall, 2020). Furthermore, Watson et al. (2021) outline that our general contentment with relationships is dependent on mundane social interactions more

than is comprehended. The physical distancing outlines of COVID-19 provide a barrier to this level of connection felt in relationships as individuals are experiencing less mundane interactions than previous years.

Luetke et al. (2020) study on the impacts of the COVID-19 pandemic on romantic, intimate, and sexual partnerships similarly looks into the conflicts induced by COVID-related restrictions. Their findings revealed that 34% of participants experienced increased conflict and decreased intimate behaviours with their romantic partners due to COVID-19 and its resulting influences (Luetke et al., 2020). Many factors, including the decrease of social interaction, limited access to mental health care services, and separation from loved ones predict poor mental health outcomes, which in turn predict strained relationships (Luetke et al., 2020). These findings suggest that the added stressors put in place by the COVID-19 pandemic predict negative adaptations by individuals, which may negatively impact behaviours towards romantic relationships.

Some of the research conducted on relationships outlines the protective qualities of social interactions and support during stressful events. Bolger and Eckenrode (1991) developed a study which tested the ability of social integration to buffer the stress experienced during academic examinations. Social integration in this case refers to the average number of people a subject interacts with in specific familial, peer, voluntary or religious domains (Bolger & Eckenrode, 1991). They found that many subtle processes occur that impact how individuals perceive and seek social support. These are influenced by personality and social circumstances. Most importantly to our research, additional findings suggest a strong correlation between social integration and the reduction of stress during the time of a high stress event (Bolger & Eckenrode, 1991). While this research has implications for how negative stressful events can be buffered by the processes of social relationships, there are a few limitations. The study focuses specifically on one stressful event, while our research will more generally focus on broader life events or social circumstances. Similarly, their research has limitations in explaining in totality the relationship between such events and individual and social health behaviours.

Another important factor that impacts relationship maintenance is social interaction. Unfortunately, one of the main preventative measures towards the COVID-19 pandemic happens to be the reduction of social interaction. Social distancing and isolation measures have been a widely adopted tool in the fight against the spread of COVID-19. The reduction of disease transmission is the primary aim of social distancing and isolation strategies. These measures have the ability to slow the spread of the quickly travelling disease, but similarly place restrictions on how individuals go about establishing and maintaining their personal and romantic relationships. This may result in adverse social, psychological, and economic consequences, as noted by Block et al. (2020) in their study on social network-based distancing strategies. Similarly, the changing social atmospheres have led to a redefinition of social interaction that will inform how individuals interact with those around them.

Communication

Literature focused on communication demonstrates that due to its dynamic properties, it is a difficult concept to encompass in one definition. Solomon and Vangelisti (2010) address the functions of communication in the initiation, development, and maintenance

of personal relationships. Through sharing messages and generating shared meanings, individuals utilize communication in order to define associations and select appropriate behaviours (Solomon & Vangelisti, 2010).

The current pandemic has forced new methods and frequencies of communication for many. Adami et al. (2020) developed a manifesto with aims of presenting the changes in communication due to the COVID-19 pandemic, in addition to interventions which may inform future research. These researchers first address the importance of considering communication practices throughout and after the pandemic. Research on the immediate mental and biological health-related challenges faced by the general public have been given priority. While these efforts are essential, Adami et al. (2020) establish the importance of the social and communicative changes that will undoubtedly impact society for the foreseeable future. The complex system of communication has long relied on the human body for social interaction, and the restrictions based on the spreading pandemic has reshaped how we define these interactions (Adami et al., 2020). New social norms have forced us to learn new ways of living, new ways of mediating in-person interaction, new avenues for social connection (mainly technological) as well as new processes of making meaning during interaction (Adami et al., 2020). These changing parameters surrounding communication among individuals require a consistent renegotiation.

Adami et al. (2020) urge the recognition of the many faces of this issue and the reach it has, demographically, geographically and socially. Similarly, they recognize the interdisciplinary scope and complexity of the issue of communication with others during a global crisis. Their work can inform how we think about our study. It will be essential to our study for us to understand the intersectionalities and complexities of this topic. In order to contribute to this body of knowledge, we must recognize that there will be no clear solution, but an abundance of difference that might allow us to advocate on a broader level.

Adaptation

Many implications within related research investigate the adaptive processes of individuals when experiencing negative events. This is an important aspect to consider, as it will be an essential task to determine how to address the impacts of COVID-19 on communication and in turn, peer and romantic relationships. Licoppe (2004) suggested that relationships are dependent on communicative devices. If we understand that interpersonal relationships rely on communication, we must similarly understand how the current state of the world has partially blocked the ability to do so in face-to-face contexts. To combat this, individuals either do or do not find ways to combat these challenges by finding other ways of maintaining their peer and romantic relationships.

Technologically based social interaction is one frequently noted method to maintain relationships in lieu of COVID-19 related restrictions. Due to the multiplicity of spaces in which relationships can exist, it has become increasingly common to develop and maintain relationships without ever interacting in a face-to-face context (Licoppe, 2004). Licoppe (2004) further outlines how multiple management strategies, including spread-out, long or frequent, short discussions over the phone can assist individuals in feeling a connection with more permanence. Other strategies included short and frequent texts as gestures that reinforce social connections (Licoppe, 2004). Researching communication between university aged students in the 2020-2021 year increases the importance of

literature on technologically based communication. Turner (2015) notes that Generation Z, the generation that a majority of current day university students are in, are motivated strongly by technology. This cohort of individuals have continuously found comfort in online communication, preferring it over face-to-face interaction before COVID-19 (Turner, 2015). This style of communication is different from those of previous generations as Generation Z has grown and developed in a technology boom that largely determines much of their lives (Turner, 2015). When studying communication in a physically distanced social environment, such as that of COVID-19, this dependence on virtual communication is important to the understanding of preferred communication methods.

Multiple studies similarly address the utilization of social media as a method of increasing positive social behaviour without the ability to have face to face interactions. Moore and March (2020) utilized an online survey in order to collect data on perceived levels of loneliness during early periods of social isolation imposed by the Australian government. Through question scales, researchers measured perceived loneliness, levels of connection and utilization of healthy coping behaviours. The results suggested that medium to high levels of loneliness were experienced by participants, who also demonstrated lower usage of healthy coping mechanisms (Moore & March, 2020). Alternatively, their study revealed that connecting with others via phone, messaging or other social media platforms positively related to healthy coping behaviours (Moore & March, 2020). Media connectedness with others further predicted that individuals would proactively maintain individual mental health (Moore & March, 2020).

Another common consideration within reviewed research is the idea that each relationship will vary in regard to the adaptation methods used. As cited previously, Pietromonaco and Overall (2020) address the many contextual factors which may increase the negative influences on couples' relationship satisfaction. Past experiences and life circumstances predict the ability of individuals to navigate the uncertainty of the COVID-19 pandemic (Pietromonaco & Overall, 2020). They conclude, in addition to the implementation of policies that would remove socioeconomic and healthcare related barriers, couples may benefit from learning positive adaptive relationship processes, including learning how to communicate with and support their partners (Pietromonaco & Overall, 2020). This research does, however, address the social circumstances of older adults. As we are studying the undergraduate student body, we may need to consider the alternate potential intersectionalities being experienced by younger populations.

Digital Communication and Its Implications

As the pandemic has shifted interaction away from in-person communication, understanding the implications of social media and digital communication methods is imperative to our knowledge of relationship processes. Thorisdottir et al. (2019) describe two types of social media use: active and passive. Active social media use is defined as "chatting, sharing photos, or status updates with a specific audience or posting other personal content that others can then comment or give likes" (Thorisdottir et al., 2019, p. 536). Passive social media use is defined as "browsing, scrolling, reposting links, or looking at content from others" (Thorisdottir et al., 2019, p. 536). However, the consequences of social media use may differ depending on the type. Escobar-Viera et al. (2018) explain that those who use social media more passively are more likely to

experience feelings associated with depression and anxiety. It is crucial to examine digital communication habits, including social media use, during the pandemic due to the change in available methods for communication and the psychological impacts of isolation. Due to environmental factors and situational differences, romantic relationships will be affected differently than peer relationships by the mass amount of digital communication brought on by the pandemic (Thorisdottir et al., 2019). Thorisdottir et al. (2019) explain that active social media use does not have the same negative outcomes on romantic relationships as it does on peer relationships. It is imperative that we examine both how the effects of digital communication will be altered due to the pandemic, as well as how they differ between romantic and peer relationships.

Increased social media use is also associated with social distress that has the ability to impair relationships when experiencing an environment such as COVID-19. Hetz et al. (2015) describe the concept of Fear of Missing Out (FOMO): individuals concerned about being excluded from social experiences that their peers are enjoying. FOMO generates feelings of disconnection that encourage the increased use of social media to mitigate the negative effects; increased exposure to social media, however, exacerbates the number of experiences one is exposed to and creates a cycle of FOMO (Hetz et al., 2015).

Summary

This literature review addressed a number of topics relevant to the purpose of our research. It first conceptualized relationships and the processes that assist in their development and maintenance. Next, we covered the definition of communication, in addition to multiple variables that influence how and why individuals connect with each other in the ways they do. Further, adaptive methods were outlined in relation to the COVID-19 pandemic. These included new ways of interacting with peers and partners based on pandemic-related restrictions. Finally, we discussed digital communication, passive and active social media use, FOMO and the resulting effects on relationship processes.

Concluding Remarks

Research on the COVID-19 pandemic, while emerging, remains sparse. Much of the research discussed in this review varies in its relationship with our purposes. There are demographic, field of study and thematic limitations in the peer reviewed research on relationships and the COVID-19 pandemic. Each of these limitations reinforces the importance of our research. Our study will look more specifically at the impacts of recent months and events on personal relationships of undergraduate students. We wish to take a broader look at the new ways of conceptualizing relationship maintenance among university students, how communication has been impacted and similarly how it has been redefined in order to increase positive relationship growth. Through this, we have the potential to further develop an understanding of the social circumstances of young people during a global crisis. Studying complex topics such as relationships and communication is a feat, in that these concepts are addressed in alternate styles based on several individual cognitive and social factors, in addition to contextual variables. It is important to address these differing styles of communication and adaptation to adversity because it can provide a deeper comprehension of the ways in which social issues may be addressed on a level that can assist as many populations as possible.

Theory

Symbolic Interactionism (SI)

The perspective that we are interested in using is Symbolic Interactionism (SI). The term was originally coined by George Herbert Mead, but Blumer is recognized to be the father of SI as he formally defined and developed three premises (Blumer, 1986). In his work, *Symbolic Interaction: Perspective and Method* (1986), Blumer (1986, p. 27) explains SI to be “the study of how people negotiate the meaning of social life during their interactions with others.” The viewpoint is at micro level and heavily emphasizes meaning making processes as individuals have the agency to explore their socially structured societies (Blumer, 1986, p. 2). In addition, Blumer (1986, p. 2) defines the three premises of SI: meanings arising out of social interaction, “human beings [acting] towards things on the basis of the meanings those things have for them” and meanings going through an interpretative process in order for human beings to determine whether they want to accept or reject them.

Our group chose SI to be a prominent theory for our research as we have an understanding that every individual has different social interactions and experiences, having high potential to influence an individual’s mindset and beliefs. As a theory, SI postulates that individuals are the social agents to discover and learn about their social institutions, implying high amounts of diversity from social interactions despite being in the same society (Blumer, 1986). Through the completion of this research project, we hope to gain insight into the lived experience of McMaster University undergraduate students as they navigate different meanings regarding social interactions and connections through the COVID-19 pandemic.

Definition of the Situation (DOTS)

Definition of the Situation (DOTS) was developed by American sociologist, William Isaac Thomas. The concept focuses on individuals analyzing the social conduct of a situation. Thomas (1931) explains the purpose of DOTS as the following:

Preliminary to any self-determined act of behaviour there is always a stage of examination and deliberation which we may call *the definition of the situation*. And actually not only concrete acts are dependent on the definition of the situation, but gradually a whole life-policy and the personality of the individual himself follow from a series of such definitions. (p. 254)

The evaluation includes: the roles of every individual (including one’s own role), the mental state of each individual, the accepted behaviour norms that are set by society and by the environment of the situation, a shared sense of goals and appropriate action, and the meanings behind each of these aspects (Thomas, 1931). The result of individuals learning of the DOTS will give them the understanding of what is expected of them and of other members, the goals of the situation, and what social behaviours are deemed appropriate.

Our group decided to use this theoretical framework as we found it was important for us to understand what actions people may take based on the situation they are in, when communicating with others. We recognize that there is a possible decrease with in-person conversations and potential increase in virtual conversations in order to “flatten the curve” of COVID-19. We can apply Thomas’ (1931) DOTS concept of “situations” to the assortment of communication methods (i.e., texting, direct-messaging, audio/video-

calling). From here, this framework can help us acquire information and compare the differences in self-presentation based on the social setting the individual is in.

Frame Analysis (FA)

Frame Analysis (FA) was developed by Erving Goffman. Goffman (1974, p. 21) describes frames as “the principles of organization which govern events — at least social ones — and our subjective involvement in them”, leading to the definition of frame analysis to be “[a] ‘schemata of interpretation’ [that] helps people to ‘locate, perceive, identify, and label’ everyday events.” Goffman (1974) explains how a frame analysis begins with “a transparent view of reality” (Ritzer, 2003, p. 54), that is known as a primary framework; the framework can be natural (based on physical events), or social (based on human interactions). From here, the primary framework can be transformed into either keying, “meanings [being] transformed into something patterned on but independent of the initial frame” (Ritzer, 2003, p. 54), or fabrications, “a false belief about what it is that is going on” (Goffman, 1974, p. 83). Both have the ability to influence our interpretations and meanings, as they can alter our sense of reality.

Our group decided to include Goffman’s (1974) FA in our work as it helps us understand the interpretations and meanings that individuals have developed out of their social interactions. Now that there are rules about physical distancing during the COVID-19 pandemic, there has been an increase in social interactions being done virtually. Compared to in-person interactions, this can be challenging to interpret the meanings of certain messages, as there is no concrete display of emotions. With this framework, we can gain insight into the interpretations that individuals have within their conversations, how some interactions are thought to be more significant, and why certain communication styles have produced more meanings than others.

Perspective-Taking Model (PTM)

Robert L. Selman (1973) created the Perspective-Taking Model (PTM), which is also recognized as the role-taking ability. Delamater, Myers and Collett (2019, p. 281) describe PTM as the communication between individuals that use symbols and meanings in order to convey a shared context. Selman (1973) describes three stages of social perspective taking. The first stage is called “Egocentric Role-Taking” (Selman, 1973). According to Selman (1973), between the ages of four to six, a child has difficulty with the distinction of perspectives, especially between their own and of others. Selman (1973) identifies “Social-Informational Role-Taking” as the next stage, where six to eight-year olds understand that others may possibly have contrasting views from them despite being in the same social setting, which can lead to different information that was not a part of their view. The final stage, set for ages eight to ten, is the “Self-Reflective Role-Taking” (Selman, 1973). With the acceptance of the previous stage, the child is now able to understand the concept of them being able to interpret their thoughts and feelings through the lens of another person’s eyes and that others have the ability to do the same for them as well (Selman, 1973).

Our group felt that the PTM would be another excellent framework for our research project as it would give us a deeper understanding of the various perspectives that we may encounter during data analysis. Although our survey questions are set to be answered in the perspective of the individual taking the survey, there are some questions

that require the individual to be empathetic and consider the views of the significant other(s) in their life. For example, our survey includes questions that discuss the challenges that have emerged in the individual's communications with their interpersonal relationships; individuals can select multiple options that best apply to them as well as type in their answer for other options that are not displayed. Not only do these questions encourage the individual to reflect on the struggles that they have been having, but also the potential struggles that their significant other(s) may be experiencing. Having this theory as background context will help our group recognize the reasoning behind certain choices that the individuals made in the survey.

Interpersonal Spacing

Delamater et al. (2019, p. 284) define interpersonal spacing as the "positioning of [one's] body at varying distances and angles from others." Some examples of interpersonal spacing may be sitting close or far from someone, using barriers to avoid close proximity, turning away, looking straight forward versus looking to the side, and intimate closeness. Despite interpersonal spacing being a type of nonverbal communication based on physical closeness and body language, it has the potential of conveying certain messages. For instance, if one's significant other sees their partner sitting on the couch and chooses to sit beside them, it can be identified that they are happy to be with their partner, but if they choose to sit on the opposite side of the couch while turning their back, they can identify them being angry at their partner.

Our group decided to include the theoretical framework of interpersonal spacing as we are interested in seeing how the communication between individuals will vary as interpersonal spacing varies. Returning to the concept of physical distancing and the set regulations of minimal contact with others, the use of interpersonal spacing has exponentially decreased, causing the possible difficulty of understanding specific impressions from others. Our research group would like to study how the lack of interpersonal spacing has affected communication in peer and romantic relationships, as well as the alternatives that participants have been utilizing to express emotions (in a non-verbal manner).

Summary and Concluding Remarks

The frameworks that our group chose for our research project are Symbolic Interactionism by George Herbert Mead, Definition of the Situation by William Isaac Thomas, Frame Analysis by Erving Goffman, the Perspective-Taking Model by Robert L. Selman, and Interpersonal Spacing by John Delamater, Daniel Myers, and Jessica Collett. We believe that Symbolic Interactionism will aid us in learning the numerous, diverse perspectives that individuals may develop as they experience the COVID-19 pandemic. As well, Thomas' Definition of the Situation gives us the understanding of how certain behaviours have the power to change the dialogue based on which communication method is being used. Frame Analysis will aid our examination of the varied interpretations that individuals develop during their interactions. With the Perspective-Taking Model, it will benefit our research as it will help us understand individuals' perspectives within social interaction. Our last framework, interpersonal spacing, will emphasize how communication between individuals may differ without the influence of physical proximity and body language.

Methodology

Problem Statement and Research Questions

The COVID-19 pandemic has affected individuals globally in a variety of ways. Living through a global pandemic presents many challenges to the relationships we find ourselves involved in. This includes family, friends, and romantic partners. By drastically reducing our ability to interact with those outside of our current household, it creates problems with communication and can lead to relationship problems or, in the most extreme cases, relationship termination. Communication processes are now more frequently conducted via electronic means (i.e., texting and video chat), where it is harder to convey emotion, intention, and tone. Miscommunication can lead to frustration within relationships and may lead to further issues. Due to the challenging circumstances caused by the COVID-19 pandemic, it may be increasingly difficult for individuals to communicate with their peers and romantic partners. Lack of in-person contact and communication makes it significantly harder for most individuals to maintain their close relationships. Through this research, we hope to discover the ways undergraduate students have attempted to counteract the effects that the current pandemic has placed on communication across relationships.

Our research intends to discover how the process of communication and maintaining strong peer and romantic relationships has been affected by the COVID-19 pandemic. We chose to conduct research on this topic for several reasons. The primary reason is the lack of research surrounding the pandemic, giving us the ability to discover how the pandemic has affected different relationships while we are experiencing it. Each group member has experienced changing relationships in unique ways, and we were and remain interested to hear other individuals' stories. We have chosen to explore peer and romantic relationships because it will give us an understanding of how the different areas of our relationships have changed and how we have come to adapt to the changes in each area.

Ethical Considerations

The research was approved by the McMaster Research Ethics Board (MREB #: 0327). This research project posed no greater risk than that of everyday life, with the following ethical concerns being acknowledged and controlled to the best of our ability. There were no physical risks that the participants faced, but there were possible social and psychological risks that we acknowledged and planned for in this research. Socially, we acknowledged the risks of privacy and confidentiality for participants. Although this was an entirely anonymous survey, we acknowledged that participants may not have had access to a private space or device in which to complete the survey. We acknowledged that this could cause concerns about their privacy in these spaces, and participants may have experienced stressors or social consequences from the presence of others. The psychological risks that may have occurred during this research include the discussion of relationships and subsequent problems within them. Participants may have experienced unpleasant feelings if reminded of negative memories or thoughts about their relationships while answering the survey material. This was unique and dependent on the individual's experience with relationships and the effects of COVID-19. As these thoughts have a higher potential to occur in day-to-day life, we concluded that feeling negative

thoughts about a recent negative interaction (within the COVID-19 timespan) was within the realm of minimal risk.

We prepared the following procedure to manage these risks. To address the social risks involved in this research, we explained to participants through the recruitment and/or study instructions that they have the ability to take this survey at any time, and in any space that they feel the most comfortable. In these explanations, it was ensured that all information collected was confidential in nature, and there was no way for us to trace these responses back to them. Finally, participants were informed that they were free to withdraw from the survey at any point if they felt uncomfortable proceeding, and that they were welcome to not submit their responses at all if they felt discomfort or stress around doing so. To combat the potential psychological risks, a letter of information was created to provide each participant with the knowledge of these risks, to ensure confidentiality and to give participants the ability to make an informed decision on whether or not to participate in the survey. Additionally, each question in the survey contained a “Prefer not to Answer” option that allowed participants to move past questions that may elicit negative emotions. Similar to the social risk management, participants were informed of their freedom to stop and exit the survey at any time without repercussions. To help combat any emotions that were brought up for participants, contact information and links to resources available at the Student Wellness Centre were provided in both the Letter of Information and at the final page of the survey to support students if they were experiencing distress.

In making the study ethical, we felt it was important to acknowledge potential conflicts of interest, how those were managed to remain impartial, and not apply pressure to participants to answer survey questions in a certain manner. Each member of this research team is a fourth-year student at McMaster University, and therefore all had student-to-student conflict of interests with potential participants. Each member also has unique roles in various groups on campus that created conflict of interest. These roles are as follows:

At the time of our research, Jordan Graber worked with the executive team of the Social Psychology Society, as well as MSU’s Maccess as a Volunteer Peer Supporter. She was also a Blu Cru representative and the Graphic Designer for the McMaster Undergraduate Journal of Social Psychology. Baila Lovejoy was a member of the Social Psychology Society executive team. She was also the coordinator of MSU Spark and was a member of the Mac Dance Recreational Team. Additionally, she worked as a Dance Marathon Subcommittee member as a part of McMaster Smiling Over Sickness. Alyssa Nerland worked as a Teaching Assistant and was another member of the Social Psychology Society’s executive team. She was also a Blu Cru Representative. Christina Doan was the Public Relations Coordinator of the Music Society, the fourth-year representative of the Social Psychology Society, a member of the David Gerry Flute Ensemble, and a Teaching Assistant. Kirsten Hutt was a part of the Women’s Rugby team at McMaster.

We planned to manage these conflicts in multiple ways. First, recruitment only took place on third party platforms, referring to clubs and societies on campus, meaning that no member of this research team recruited participants through personal social media or personal interactions. This ensured that no participant would be addressed directly by the members of this team. Kirsten acted as the recruitment director as she had the least number of affiliations on clubs and had no affiliations with any of the chosen third-party

platforms to recruit through. Participants were also fully aware of who all the researchers were in this study, so they were able to make an informed decision on their desire to participate. By having a completely anonymous survey, participants could be confident that their participation would not be known by the researchers should they have a relationship with any of us, which aided in preventing any biases from occurring.

Research Methodology

For our research study, we utilized a quantitative methodological approach to study how communication and relationships have been impacted by the COVID-19 pandemic. Upon approval, this approach took form in an online anonymous survey, hosted on the McMaster Research Ethics Board (MREB) approved site, LimeSurvey. We worked with convenience sampling, through the use of third-party recruitment. We chose this method of research because it allows minimal in-person contact, flexibility during the design process and due to its interpretive and financial convenience.

Minimal contact was beneficial to our study due to COVID-19 safety concerns and restrictions. Individuals had the ability to complete this survey in any place and at any time of their choosing, without any requirement for in-person contact. This similarly left little room for influence due to researcher bias. In addition, this type of data collection allowed us to utilize a range of question forms. One that we were very interested in using was the Likert Scale, which allowed us to easily collect and compile a large variety of information from participants. Likert Scales are also user friendly and made the survey experience more positive for student respondents. This survey method provided us, as researchers, with flexibility in developing our questions, in addition to analyzing and comparing results. The online survey also allowed us to reach a large sample size, while using limited resources.

Steps of Research Process

This section of the proposal will outline the steps that were taken to establish, plan and begin the process of our research. We began by first brainstorming our topic of study. We wanted to find a subject that was neither too broad nor too specific in scope in order to ensure there would be fewer difficulties in the collection of data, and the applicability of findings. During this process, we were particularly interested in multiple topics concerning the current social climate. This included varying subjects related to and influenced by the COVID-19 pandemic. Due to our personal experiences with recent events, we ultimately decided to centralize on this topic for our project. We felt that this was a unique opportunity to learn from an event of global proportions that has been experienced both individually and collectively. We discussed the importance of gathering this first-hand information as it unfolded, in order to inform policy and interventions aimed at supporting individuals through similar events in the future.

In the next part of our brainstorming process, our branched ideas included the pandemic's impact on academia and social relations. As students of the Honours Social Psychology Program, we recognized the importance of relationships and the influences of negative contextual stressors. The concept we initially finalized concerned how romantic relationships were impacted by the COVID-19 pandemic. However, this concept developed as we consulted Dr. Clancy, collected background research, considered ethics, and discussed our unique experiences with COVID-19. Our next drafted question

considered the influences of the pandemic on family, peer and romantic relationships. When developing survey questions and consulting research, we still found this topic to be too broad in scope. We found that it would be best for our research to find a specific area of interest that has connections to how people maintain social ties with those around them. Ultimately, we closed in on the question: How has the COVID-19 pandemic impacted communication, and as a result, peer and romantic relationships?

Along with the finalization of our research question, we operationally defined the terms we would be working with. We defined the COVID-19 pandemic as the time period beginning on March 13, 2020 and going until the present day. We defined peer relationships as long-term social connections with others that you are not biologically related to and have no romantic affiliation with, otherwise known as the colloquial term of friendship. We defined romantic relationships as connections between individuals with a mutual understanding of a romantic interest. We also understood that online fatigue could potentially be a common theme throughout our research study. According to Dhir et al. (2018), social media fatigue is best defined as “a situation whereby social media users suffer from mental exhaustion after experiencing various technological, informative and communicative overloads through their participation and interactions on the different online social media platforms” (p.1). To broaden the definition to all digital communication methods, rather than specifically social media use, we adapted this definition to “a situation whereby individuals suffer from mental exhaustion after experiencing various, technological, informative and communicative overloads through their participation and interactions through the different digital communication methods, such as texting, video calling, audio calling etc.” in order to best fit the needs of our research.

Our next step in designing this research project was examining and managing ethical considerations and possible risks. We have designed this research to be minimal risk. As per feedback from Dr. Clancy, we first changed our initial topic from being strictly about romantic relationships to including peer relationships. As a group, we discussed and managed the social and psychological risks that are outlined and described in the outline of steps in the research process. With all these ethical considerations in mind, we next filled out the McMaster Research Ethics Board (MREB) form, as per direction from Dr. Clancy.

In the process of confirming our research topic and questions, we met weekly with Dr. Clancy to discuss any progress we had made in that week and welcomed any feedback she could offer. In the following week, we would use our group’s personal meeting time to discuss the feedback Dr. Clancy had offered, leading us to adapt our topic and research questions as needed. Throughout each change, including focusing more closely on communication within relationships, we kept open lines of communication amongst the group to ensure we were all in agreement with every decision. Additionally, we gained Dr. Clancy’s approval on all revisions before moving forward with the development of our research project, as well as received general suggestions that helped us in working more effectively and efficiently. Finally, we confirmed that our research question would address how communication has been affected in peer and romantic relationships during the COVID-19 pandemic through email correspondence with Dr. Clancy.

Once we had our research area of inquiry, we developed a general research question that the pandemic has impacted communication, but that individuals may feel the impacts differently based on their unique experiences. Additionally, we believed that

communication within peer relationships has been impacted; however, we believed that the impacts would be felt more drastically within romantic relationships, in comparison to peer relationships. Next, we anticipated that individuals would have developed adaptations to their communication styles in order to be more suitable to the COVID-19 pandemic. For example, individuals may have used video-calling more frequently and in-person communication less frequently than they did before the commencement of the COVID-19 pandemic. Finally, we predicted that due to individual, personal, and contextual factors, each person would report an alternate experience of the effects this pandemic has placed on their communication, and their relationships.

The next step was choosing theoretical frameworks. During our weekly video-call meetings, we looked through a variety of social psychology textbooks and communicated with Dr. Clancy in order to determine which frameworks would be best to use when analyzing our collected data. Over time, we settled for five social psychological theories: George Herbert Mead and Herbert Blumer's Symbolic Interactionism, W. I. Thomas' Definition of the Situation, Erving Goffman's Frame Analysis, Robert L. Selman's Perspective-Taking Model, and John D. Delamater, Daniel J. Myers, and Jessica L. Collett's Interpersonal Spacing. To begin, we chose Symbolic Interactionism to be one of our theoretical works as we wanted to analyze the different experiences that individuals have endured during the COVID-19 pandemic. Next, we utilized The Definition of the Situation as we felt that Thomas' idea of the "situation" could be applied to our research as the virtual platforms that individuals are using. Our choice of Frame Analysis was inspired by how individuals view certain conversations to be more salient than others and how these salient conversations may come from certain communication methods. Moreover, the Perspective-Taking Model helped gain insight on the individualistic perspectives that have developed due to differing experiences of communication during the COVID-19 pandemic. Our last framework, Interpersonal Spacing, helped us learn about how individuals non-verbally express emotions without the assistance of physical proximity and body language.

Next, we brainstormed potential research questions for participants. These questions were informed by the literature reviewed and theories chosen. We based our questions on specific themes. These included the methods and changes in communication, as well as the emotions revolving around them. We ultimately decided on utilizing two sets of identical questions. One set was geared towards peer relationships, while the other focused on romantic relationships. Each question was thought of and approved by each member of our group.

After successfully developing our survey questions, we drafted the letter of information and the recruitment scripts that were used for acquiring participants through third-party sources. We followed the template given through the thesis class (SOCPSY 4ZZ6) to ensure the letters were done to completion and to the best of our ability. The recruitment script included: the researchers names and emails, the purpose of our study, the topic of interest, the procedure used for data collection (online survey), a statement regarding the length of the survey and three sample questions. All these components provided the third-party individuals with the ability to make an informed decision on whether or not they would like to promote our study to their followers. The letter of information given to consenting participants included the same details, with the addition of participant centered information. This included an oath of confidentiality, information on where to find help

should distress occur, and information on where to view the findings of this study after completion. This allowed the participants to have all the knowledge possible on this study before agreeing to continue. These documents were completed by Kirsten Hutt, as she was the individual in the team that was not affiliated with any of the third parties that we contacted.

Gaining ethics approval was the next step of our research process. We received feedback from Dr. Clancy, accordingly revised our research process and adapted to those changes to create an effective research design. After completing revisions and receiving final ethics approval, we reached out to various clubs and organizations across campus (listed in the next section) to recruit participants. 75 participants completed our online anonymous survey, detailed below.

When creating our online anonymous survey, we used the MREB approved survey website, LimeSurvey. In response to the advice from Dr. Clancy, we limited our number of questions to under 30 to reduce question fatigue. This survey took participants no longer than 15 minutes to complete and was possible to complete anywhere at any time so long as they had access to an Internet connection. Participants were also able to withdraw from the survey prior to submission and could choose not to answer any question at any time. We chose a combination of single multiple-choice questions, as well as Likert scale questions. Using a diversity of question types allowed us to gain a better understanding of how communication has been affected within our sample population.

Following ethics approval, and the development of our required documents, an email was sent to our list of third parties for external recruitment. This email included a letter of information and recruitment script. The list of third parties that we reached out to is as follows:

McMaster Sociology Society	McMaster Engineering Society	McMaster Public Health Association
Labour Studies Student Association	Communications and Multi-Media Society	McMaster BioPsych Society
Psychology Neuroscience and Behaviour Society	McMaster Social Work Student Collective	McMaster Smiling Over Sickness
MacKin Society	McMaster Social Science Society	Mac Dance Recreational Team
McMaster Linguistics Society	McMaster Anthropology Society	Mentorship at Mac
McMaster Social Psychology Society	MSU Maroons	

We reached out to a large number of student program societies and clubs, as we recognized that not everyone would consent to post our study on their platforms. This way, we had a greater chance of receiving a larger sample population. Once the emails were sent to our list of McMaster affiliated groups, each had the opportunity to decide

whether or not they would share a recruitment email and our research poster with their members, as well as on their social media platforms. These documents were sent out along with a link to the survey. Of the groups reached out to, the McMaster Social Science Society, Mac Dance Recreational Team, MacKin Society, McMaster Linguistics Society, and McMaster Social Psychology Society were the clubs that responded to our recruitment email.

Students who came into contact with our project through these third parties had access to a link that directed them to our survey. Before commencement, they were provided with a letter of information as previously described. The extensive explanation through these first pages provided students with all of the information needed to make an informed decision about participating in the survey. If they chose to move forward to the questionnaire, they first needed to agree to the terms outlined prior, by selecting the option that begins the survey. This confirmed their consent to participate in our research.

Next, students spent time completing the survey questions. This took approximately 10-15 minutes, as noted before commencement of the survey. As discussed earlier, students also had the ability to skip any questions which they did not feel comfortable answering. Similarly, they had the option to exit the survey at any given moment, without repercussions. If the student completed all questions of the survey and selected the "submit survey" button, their data was collected. Following their completion, participants were directed to a screen which thanked them for their participation, as well as provided them with resources to the Student Wellness Centre. This was available in the case that students require assistance following the content addressed within our research study. Finally, additional information about the upcoming poster session was provided on the final screen.

Our next steps involved data analysis, which will be addressed more thoroughly in the final section of the methodology.

Potential Challenges in Data Collection and Analysis

Due to the unique nature of the current pandemic, we detected several challenges that could impact data collection or data analysis. One of these challenges was the ability to recruit participants. Since our recruitment was conducted exclusively online via email, there was a chance that a smaller portion of the undergraduate student body was exposed to our survey. This would result in a small sample size at the end of the research, making the data hard to generalize for the student population. On top of these concerns, we also faced the potential challenge that participants would withdraw from the survey prior to completion, resulting in the loss of data. With the potential for a small sample size, participants not completing or submitting the survey at the end could mean missing out on large portions of data that would otherwise be crucial to the formation of trends and patterns.

As this was our first independent research endeavour, we saw potential challenges with correctly addressing the steps of data collection and analysis. Additionally, our group was unable to meet in-person to analyze data, which created further communication issues. We chose to conduct most of our work via Facebook messenger or Zoom meetings. We recognized that this process would be a learning experience for all, and to address these problems we ensured to seek assistance when needed.

Data Collection Timeline and Data Analysis

Our timeline for data collection, analysis and project completion proceeded as follows:

Project phase/assigned work	Tentative date of completion
Submit research project proposal and ethics protocol	October 20, 2020
Meeting with Dr. Clancy to discuss research proposal and ethics protocol	October 29, 2020
One to two-page overview of research due	November 19, 2020
Deadline for revisions of research project proposal and ethics protocol	November 20, 2020
Tentative recruitment start date (email faculty societies and other clubs)	November 23, 2020
Tentative date of survey opening	November 23, 2020
Survey closes	February 12, 2021
Start data analysis	February 14, 2021
Finish data analysis	February 26, 2021
Start to assemble poster content	February 27, 2021
Deadline to assemble poster content	March 9, 2021
Conduct poster revisions	March 10, 2021
Deadline for final poster edits	March 15, 2021
Prepare virtual poster presentation	March 10 - 17, 2021
Virtual poster presentation	March 18, 2021
Soft deadline for read through for final thesis paper	March 27, 2021
Deadline for final thesis paper	April 1, 2021
Deletion of all research data	April 2021 (following submission of grade)

As discussed previously, our survey closed on Friday, February 12th, 2021, after recruiting 75 participants. We met the following Sunday to commence the data analysis process. In this time, we went over participant responses within LimeSurvey, plans for

analysis, and consulted multiple sources explaining the alternate resources available for analyzing our findings, including PSPP.

Our research team utilized the PSPP system to analyze the information for patterns, trends, and overall themes. We had initially planned to use SPSS to conduct the analysis of our LimeSurvey data upon collection. However, we ultimately chose to use PSPP, a free platform available online. This program was simpler to access, as SPSS is a program typically used through McMaster computers. Due to the pandemic, we were unable to reach campus to access these technologies. Kirsten Hutt and Christina Doan downloaded the program to their laptops, and were selected to import the data into PSPP.

We downloaded one syntax file and one Comma Separated Value (CSV) file from LimeSurvey. These were then uploaded to PSPP. From here, we developed data charts. We encountered issues with making cross-tabulations, inputting and formatting the data into the charts, and multiple stylistic aspects. Due to this, our team transferred our work to Excel in order to format our data into clean, comprehensible graphs and charts. This process involved the use of password protected files in order to maintain confidentiality. Excel allowed us to maximize our efforts by providing the opportunity to collectively format our data on the same file. Through this, we were able to view each other's progress and provide assistance where needed.

To begin data analysis, we ran simple frequency graphs for each of the questions asked. Next, we ran descriptive statistics. This allowed us to have an overview of responses and better understand the basics of our data and findings. Trends and themes began to emerge, which led us to focus more specifically on a few areas. By running cross-tabulations between data sets, we were able to discern whether or not certain variables were connected. When we found variables that we felt were connected, we developed graphs that represented those correlations, and consulted our literature and theories in order to explain the associations.

Our first task was to compile significant findings for the thesis poster presentation. We conducted more in-depth examinations of multiple questions that we found to be most reflective of our research as a whole. The significant insights provided became the basis for our Poster Presentation, which occurred on Thursday, March 18th, 2021. After that, we continued cross-tabulating our data. The findings of these analyses are documented and discussed throughout the remainder of this report.

Summary

This section detailed the methodological process of our research. We first reiterated the purpose of our research and the questions being addressed. Next came an overview of multiple ethical considerations, followed by an outline of research methodologies. The following section provides an overview of the initial steps of the research process, up to data analysis. We then addressed any potential complications perceived by the members of our team. Finally, we provided the timeline of our research, in addition to the steps we took in data analysis. Each step came with its own challenges and was met with compromise and persistence.

Results

Demographics

Our survey included demographic questions asking for age, ethnicity, gender, and year of study at McMaster University. The sample size is 75 participants for peer relationships (n= 75) and 57 participants for romantic relationships (n=57).

Age

The age of our participants ranged from 18 to 29 (Figure 1). The largest age category represented in our study is 21 years (32%), followed by 20 years (24%) and 22 years (12%).

Figure 1

Frequency – Participants' Age

What is your age?	Frequency
18	6
19	7
20	18
21	24
22	9
23	3
24	2
25	1
26	1
29	1

Ethnicity

Participants reported a variety of ethnic identities, with Caucasian being the majority (49.3%), followed by Asian (16%), Biracial (9.3%), Middle Eastern (8%), European (5.3%), and Indigenous (1.3%) (Figure 2). 2.6% of participants reported Canadian as their ethnicity and thus created a separate category due to the ambiguity of this response.

Figure 2

Frequency – Participant's Self-Identified Ethnicity

Ethnicity	Frequency
Caucasian	37

Canadian	2
European	4
Indigenous	1
Asian	12
Biracial	7
Middle Eastern	6
No Response	6

Gender

In terms of gender, the majority of participants in our study were female (93%), followed by male (7%) (Figure 3). There were no other self-identifying gender identities represented in our study. This question was presented in an open-ended fashion to our participants, but we only received responses of those who identify within the gender-binary.

Figure 3

Frequency – Participant's Self-Identified Gender Identity

Gender	Frequency
Female	70
Male	5

Year of Study

Finally, our study asked participants what year of undergraduate study they were currently enrolled in. The majority of participants in our study were currently enrolled in fourth year (38.7%), followed by third year (26.7%), first year (10.7%), and with the lowest representation of participants, second year and other (each 8% respectively) (Figure 4). 4% of participants chose "Prefer Not to Answer" in regard to their current year of study.

Figure 4

Frequency – Participants' Current Year of Undergraduate Study

Year of Undergraduate	Frequency
First Year	8
Second Year	6

Third Year	20
Fourth Year	29
Other	6
Prefer Not to Answer	3

Communication and Social Support

Peer Relationships

The first question in our survey asked participants if they felt their peer relationships had been altered due to changes caused by the COVID-19 pandemic. 92% of participants felt that they had been altered, 1.3% felt that they had not been altered, and 6.7% of participants did not respond. Additionally, we asked to what extent participants agreed with the statement “I feel I have strong communication with my peers” prior to the pandemic, as well as following the commencement of the pandemic. 17.3% of participants moderately agreed with the above statement prior to the pandemic and moderately disagreed during the pandemic. 16% of participants strongly agreed that they had strong communication prior to COVID-19, but only moderately agreed during the pandemic. 13.3% of participants remained consistent, reporting that they moderately agreed with the statement that they had strong communication before and during the pandemic.

On the subject of strong communication and the frequency at which participants spent time with their peers in-person during the COVID-19 pandemic, 21.3% of people never spent time with their peers in-person and felt they had weak communication. 14.7% of participants felt neutral towards the strength of their communication with their peers and spent time with them in-person approximately once a month. 12% of participants felt as though they had exceptional communication and had in-person interactions with their peers once a month.

When comparing connectivity levels with peers, 46.7% of participants felt they had strong connections to their peers before the commencement of the COVID-19 pandemic. Of those that strongly agreed beforehand, 8.6% still strongly agreed, 22.9% moderately agreed, 40% felt neutrally, 22.9% moderately disagreed, and 5.7% strongly disagreed that they had strong communication during the COVID-19 pandemic. When measuring feelings of support by peers before and during the pandemic, 32% of participants did not change in their perceived experience of the support they received. 14.7% of participants moderately agreed before, but became neutral during the pandemic. 6.7% of participants strongly agreed before, but moderately disagreed after.

When assessing participants’ agreeance that they feel supported by peers and that they can provide support to their peers, 10.7% of participants moderately disagreed for both, 10.7% of participants were neutral for both, 24% of participants moderately agreed for both, and 4% of participants strongly agreed for both. When testing the interaction of online fatigue and the ability to provide support for peers, 42.7% of participants either moderately or strongly agreed that they could provide social support to peers and faced online fatigue. 20% of participants responded that they felt neutral towards their ability to provide social support, but still encountered online fatigue. 16% of participants did not

feel as though they were able to provide social support; however, they still endured online fatigue (Figure 5).

Figure 5

Reported levels of support given and received by participants in regard to their peers

		Rate how strongly you agree with the following statement as they apply to your PEER relationships following the commencement of the COVID-19 pandemic: I feel that I am able to provide social support to my peers.				
		Strongly Disagree	Moderately Disagree	Neutral	Moderately Agree	Strongly Agree
Rate how strongly you agree with the following statement as they apply to your PEER relationships following the commencement of the COVID-19 pandemic: I feel supported by my peers.	Strongly Disagree	0	0	0	2	0
	Moderately Disagree	2	8	0	2	0
	Neutral	0	4	8	4	1
	Moderately Agree	0	0	6	18	2
	Strongly Agree	0	1	1	7	3

Romantic Relationships

To begin the romantic section of our study, we asked the remaining participants if they felt that their romantic relationships had been altered due to changes caused by COVID-19. 49.3% of the participants felt that their romantic relationships had been altered due to changes caused by the pandemic. 16% of participants selected 'No', and 14% of the participants did not respond. Prior to the commencement of COVID-19, 43.4% of participants reported some level of agreement with the statement: "I feel I have strong communication with my partner". Following the commencement, only 26.3% agreed with this statement. This decrease provides the basis of understanding that reported communication changes are changed for the worse.

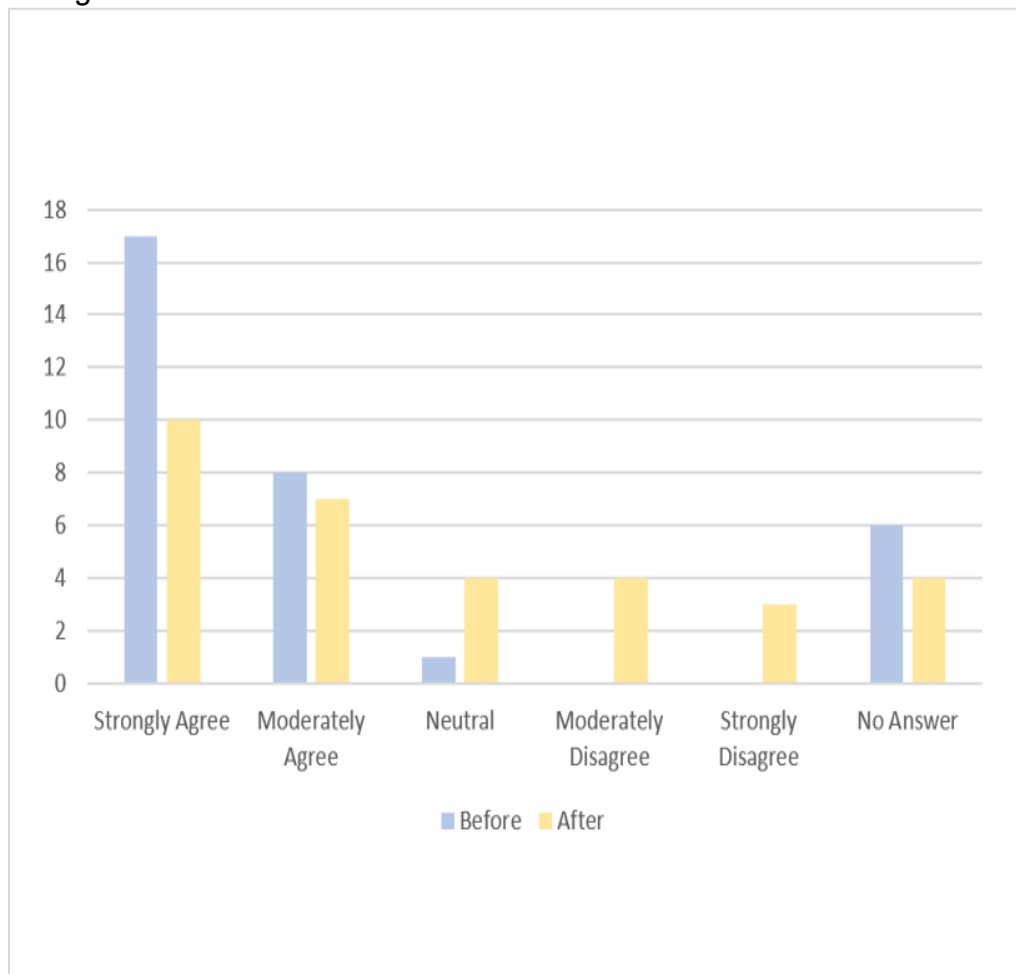
As it proved to be an important factor in peer relationships, in-person interaction and communication challenges in romantic relationships were similarly cross-examined. Prior to the pandemic, 57.9% of participants saw their partner frequently (2-5 times weekly or daily) and reported agreeing to some level that they had strong communication in their relationship. Following the commencement, several people continued reporting spending in-person time with their partner on a frequent basis and communication had not been affected; 8.7% of participants, however, reported rarely seeing their partner in-person (never or once monthly) and reported negative effects on communication.

In regard to the link between communication and feelings of connectedness, 53.1% of participants that reported communication changes noted a strong connection with a partner before the pandemic, versus 31.3% having a strong connection after (Figure 6). Those that reported no changes in communication had a 9.1% difference between the prior and after commencement conditions (63.6% prior to the pandemic and 54.5% after

the commencement). This comparison shows a moderate correlation between communication quality and feelings of connectedness.

Figure 6

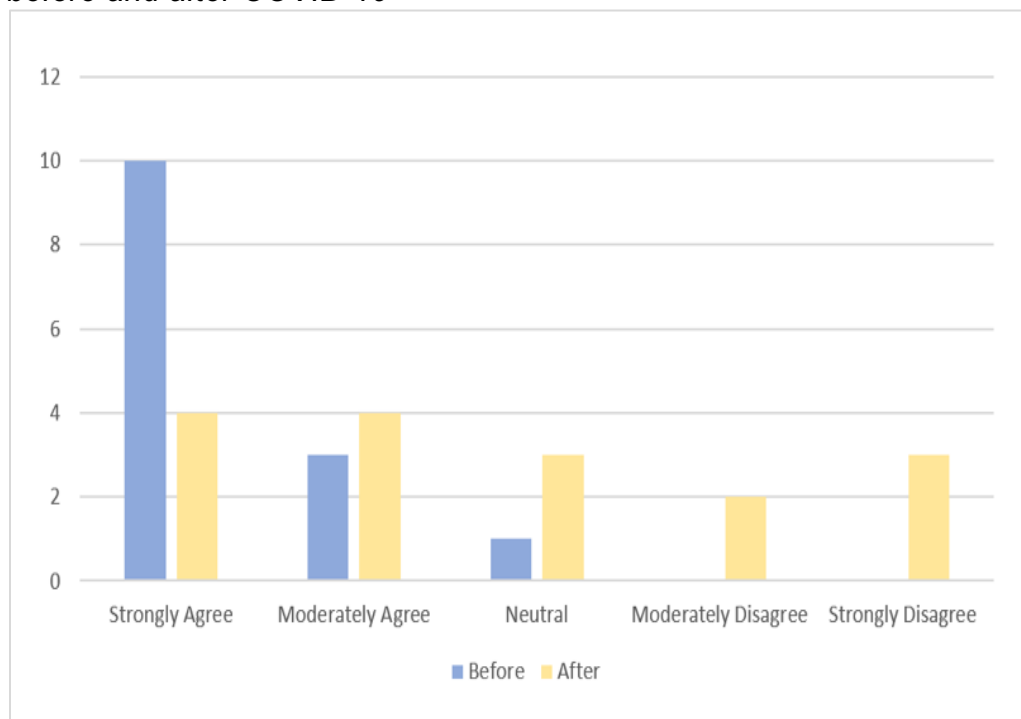
Feelings of connection to romantic partners as reported by those who indicated changes in communication



Of the participants that reported experiencing changes in social support, 52.6% strongly agreed they had strong connections prior to the commencement of COVID-19. In this variable, no participants reported having a weak connection to their partner. After the commencement, the 'strongly agree' category decreased to 21% of participants, revealing a correlation between changes in social support and connection to romantic partners (Figure 7). The 31.6% difference between time frames is shown in the shift towards disagreeing with the statement "I feel connected to my partner" when social support had changed. Of the participants that reported experiencing changes in social support, 68.4% agreed they had strong communication prior to the pandemic and 42% agreed with that statement after. In contrast, of those that reported no changes in social support, 74.2% agreed they had strong communication before COVID-19, and 65% agreed after. This shows a correlation between people feeling supported by their partner and the quality of communication they report having.

Figure 7

Feelings of connectedness to romantic partners as impacted by changes in social support before and after COVID-19



Adaptation to Physical Distancing

Peer Relationships

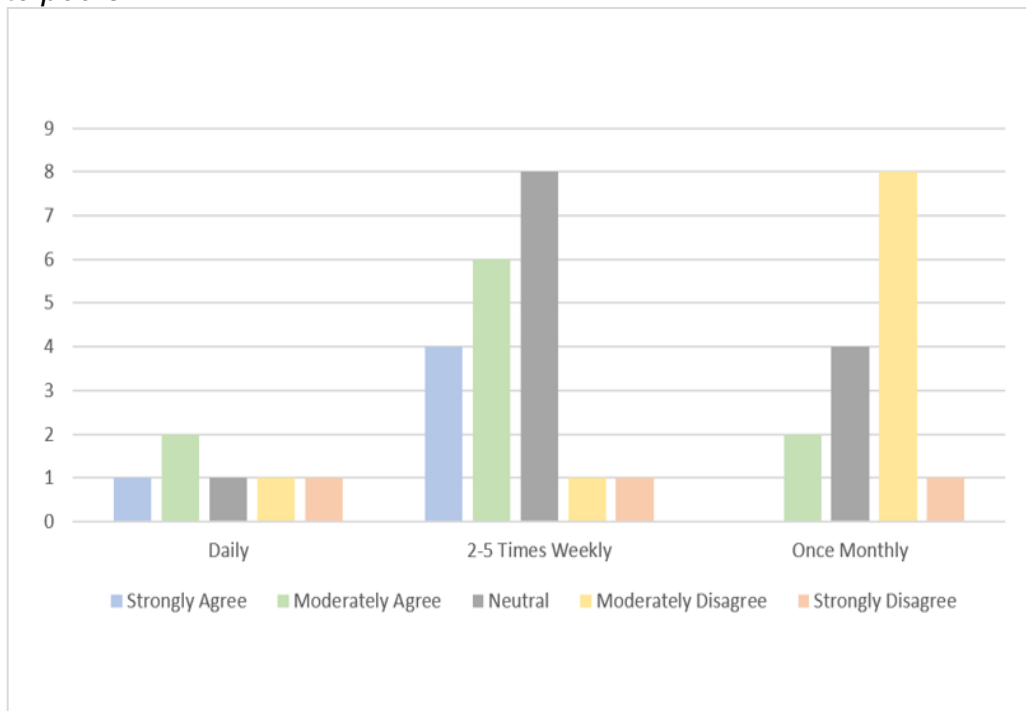
In our survey, we asked to what extent participants agreed with the statement “I frequently spend quality (in-person) time with my peers”, both before and during the COVID-19 pandemic. 44% of our participants shifted from either moderately or strongly agreeing before the pandemic to strongly disagreeing during the pandemic. Additionally, we cross-examined to what extent individuals agreed with the same statement during the pandemic, and their experiences of social disconnectedness. 64% of our participants felt that they did not frequently spend quality in-person time with their peers but reported feelings of social disconnectedness. However, only 6.7% of participants reported that they frequently spent in-person quality time with peers and experienced social disconnectedness. In our survey, we also asked about whether participants scheduled time for social interaction with their peers; 57.3% of our participants did schedule time for social interactions. Of that group, 83.7% reported feelings of social disconnectedness.

Next, we asked participants about the frequency at which they video called their peers before and during the COVID-19 pandemic. Before the pandemic, 29.3% of participants never video called their peers; during the pandemic, 12% of participants never video called their peers (Figure 8). When cross-examining feelings of connectedness with peers, and the frequency at which participants video-called their peers during the pandemic, we found that of the 28 participants who did not feel connected to their peers, 71.4% video called less than once weekly. 28.6% of participants video called at least once weekly (Figure 9).

Figure 8
Frequency – Video calling before and during the pandemic for peers

		Approximately how often did you use the following method of communication with your PEERS following the commencement of the COVID-19 pandemic: Video Calling (e.g., FaceTime, Skype, Zoom, etc.)							Total
		Missing	Never	Once Monthly	Twice Monthly	Once Weekly	2-5 Times Weekly	Daily	
Approximately how often did you use the following method of communication with your PEERS prior to the commencement of the COVID-19 pandemic: Video Calling (e.g., FaceTime, Skype, Zoom, etc.)	Missing	3	0	0	0	0	0	0	3
	Never	0	7	6	3	3	1	2	22
	Once Monthly	0	2	5	5	2	5	1	20
	Twice Monthly	0	0	3	3	0	1	0	7
	Once Weekly	0	0	1	2	1	4	1	9
	2-5 Times Weekly	1	0	0	0	2	9	1	13
	Daily	0	0	0	0	0	0	1	1
Total		4	9	15	13	8	20	6	75

Figure 9
Frequency of video calling with peers and degree to which participants feel connected to peers



Romantic Relationships

Participants that reported experiencing changes in communication reported texting their romantic partners more often than video and audio calling. 38.6% of participants reported texting their romantic partners daily, 15.8% of participants reported video calling daily, and 14% reported audio calling their partners daily.

In order to examine methods used by participants to mitigate the impacts of the pandemic, our study asked participants if they scheduled time for social interaction with their romantic partners. 39.1% of participants who reported feeling social disconnectedness also reported scheduling time for social interaction with their partner. In comparison, 60.9% of participants who reported feelings of social disconnectedness reported they did not schedule time for social interaction with their romantic partner. This indicates that scheduling time for social interaction does have a significant effect on romantic relationship connections.

Services and resources were not commonly used among participants. 0% of participants utilized on-campus services to mitigate the effects of the pandemic. 3.5% of participants who indicated they experienced challenges in communication reported they utilized online services. Due to this small percentage of respondents, we are unable to declare that on-campus and online services are effective in the reduction of challenges in communication caused by the pandemic.

Our study asked participants how often they saw their romantic partners prior to and following the commencement of COVID-19. Prior to the pandemic, 19.3% of participants who saw their partner daily reported no feelings of social disconnectedness. 10.5% of people who never saw their partner prior to the commencement of the pandemic reported feelings of social disconnectedness. This implies a correlation between in-person interaction and feelings of social disconnectedness. Following the commencement of the pandemic, 10.5% of participants who saw their romantic partner daily felt no social disconnectedness, compared to 15.8% who did see their partner daily but reported feelings of disconnectedness. 19.3% of participants who saw their partner 2-5 times weekly reported no feelings of social disconnectedness, whereas 14% of participants who saw their partner at the same frequency experienced feelings of social disconnectedness. Those that saw their partner 2-5 times weekly were almost equally as likely to experience social disconnectedness as not to.

Communication Styles and the Associated Consequences

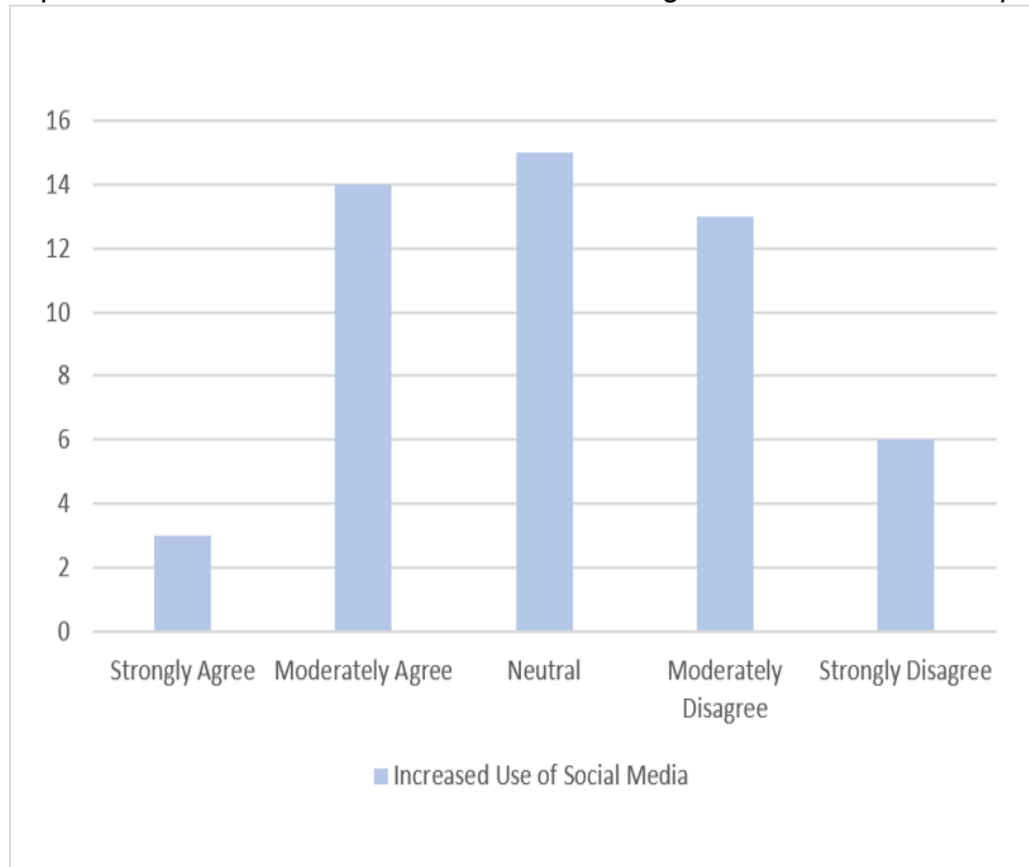
Peer Relationships

Using our survey responses, we cross-examined feelings of connectedness with peers and those who increased social media use to combat social isolation. We discovered 68% of our participants increased their use of social media during the pandemic. Of this population, 37.2% did not feel connected to their peers, 29.4% felt neutrally, and 33.3% felt connected to their peers. Returning to our entire sample, 12% of participants did not feel connected to their peers and did not use more social media (Figure 10).

When evaluating direct messaging use before the pandemic, 89.3% of participants claimed to direct message peers at least once weekly, while 6.7% did so less than once messaging less than once weekly. Additionally, we examined the habits of audio calling with peers before and during the COVID-19 pandemic. 13.3% of our participants never engaged with audio calling before and during the pandemic; only 1.3% of our participants

Figure 10

Impact of increased social media use on feelings of connectedness to peers

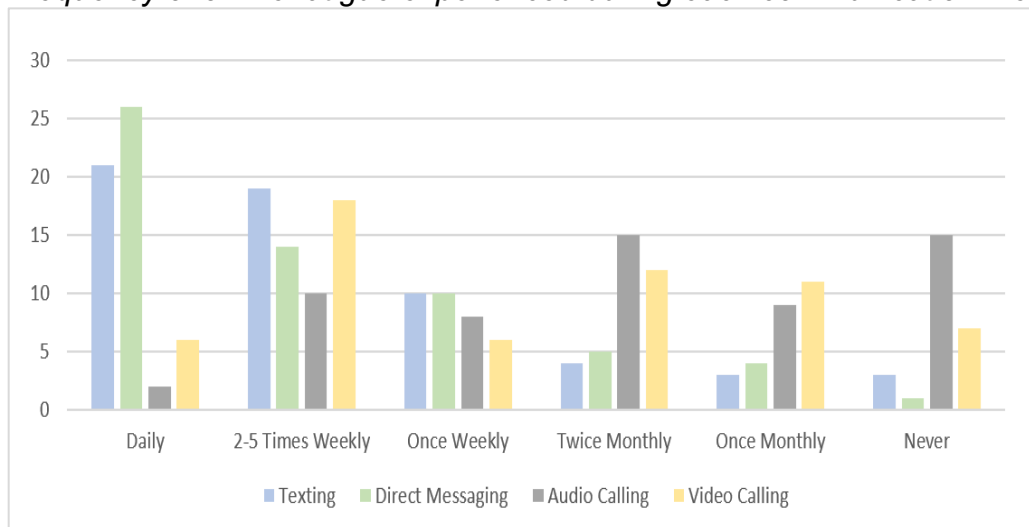


engaged with audio calling daily before and during the pandemic. In terms of an increased use of audio calling, 8% of our participants claimed that they went from using audio calling once per month to two times per month. In terms of a decreased use of audio calling, 6.7% participants claimed that they went from using audio calling once per week to two times monthly, while 5.3% participants claimed that they went from using audio calling once per month to never.

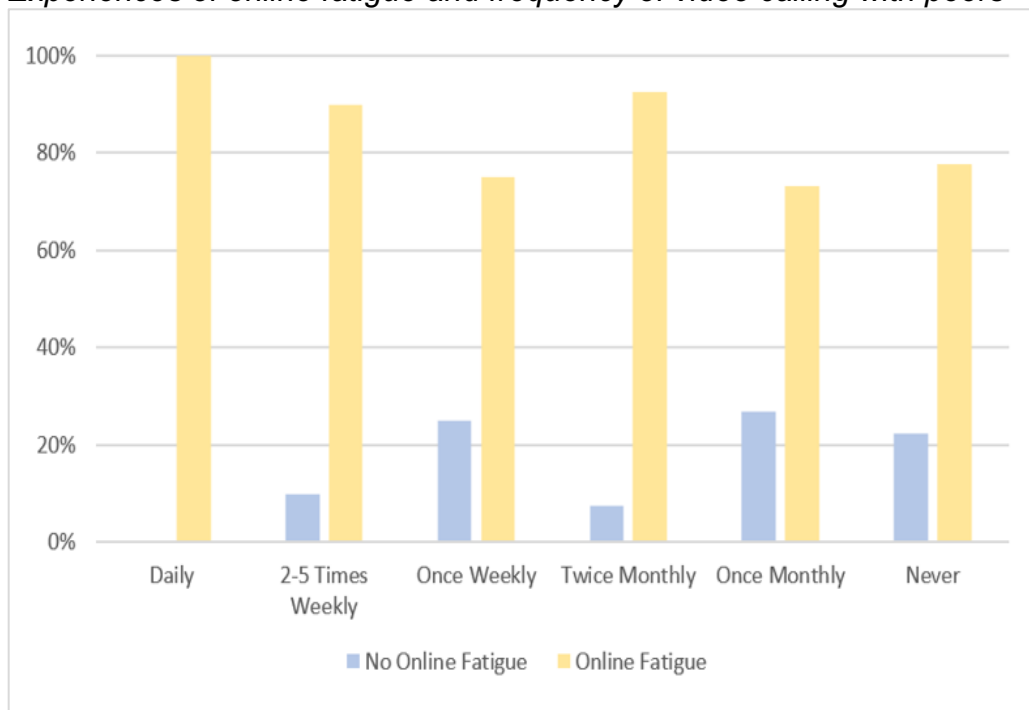
We examined the relationship between experiencing online fatigue and the frequency participants used direct messaging during the COVID-19 pandemic. Out of our sample, 34.7% of our participants used direct messaging daily and did feel signs of online fatigue. Of those who faced online fatigue and used some direct messaging, 84.7% engaged with direct messaging once weekly or more, while 15.3% did so less than once weekly. Furthermore, we analyzed the statistics of online fatigue and use of audio calling during the pandemic. 52% of participants felt online fatigue, despite using it no more than twice monthly. 13.3% of participants faced online fatigue while using audio calling 2-5 times weekly. In terms of daily use of audio calling, 50% of users felt online fatigue, while the other 50% did not (Figure 11). Likewise, we evaluated experiences of online fatigue with video calling during the pandemic. We found that 24% of our participants faced online fatigue and video called their peers 2-5 times weekly. Finally, across all categories, at least 73.3% of participants faced online fatigue (Figure 12).

Figure 11

Frequency of online fatigue experienced during each communication method – peers

**Figure 12**

Experiences of online fatigue and frequency of video calling with peers



Romantic Relationships

With regard to digital communication, our study asked participants the methods in which they communicated with their romantic partners. Participants who reported they frequently used video calling also reported higher levels of online fatigue. 50% of people who reported experiencing online fatigue also reported video calling with their partners daily. Comparatively, 29.2% of participants who reported not experiencing online fatigue

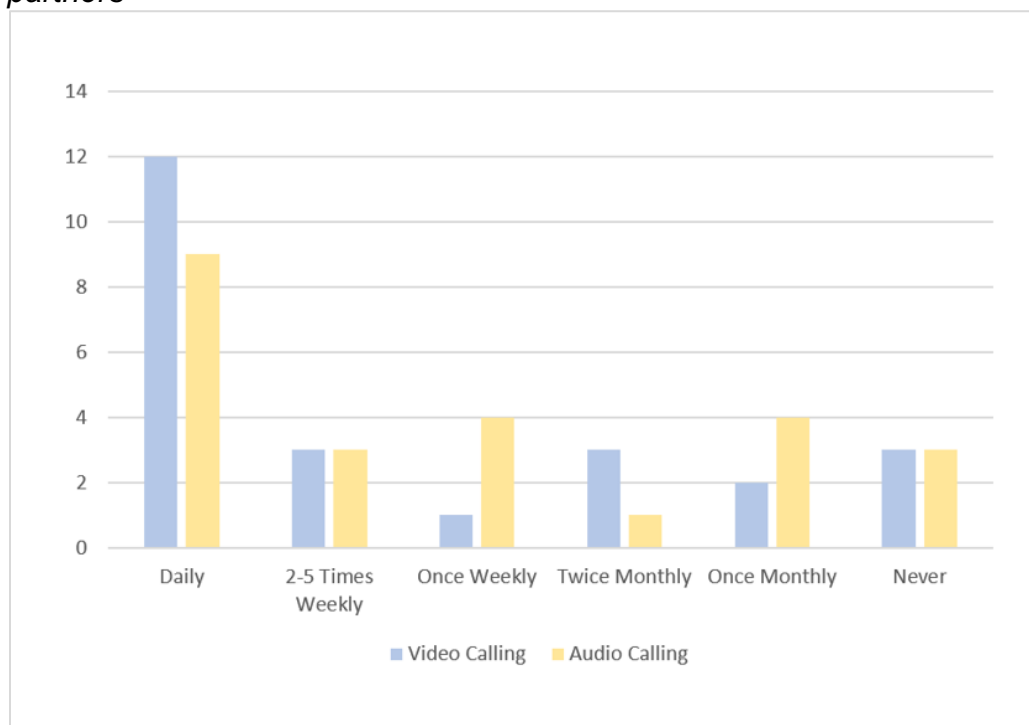
reported video calling with their romantic partner daily. 37.5% who reported never video calling with their romantic partner reported not experiencing online fatigue. 12.5% of participants who never video called with their romantic partner also reported experiencing online fatigue (Figure 13). These results indicate a relationship between video calling and the creation and maintenance of online fatigue.

Audio calling did not create the same results as video calling did in relation to online fatigue. 37.5% of participants who indicated they experienced online fatigue also reported audio calling with their romantic partner daily (Figure 13). 12.5% of participants who reported never calling their romantic partner also reported experiencing online fatigue. For those not experiencing online fatigue, 25% of participants audio called with their romantic partner daily. This relationship indicates that audio calling does not create the same feelings of online fatigue as video calling.

Finally, our study sought to examine if increased use of social media had any mitigating effects on feelings of social disconnectedness. In order to determine whether a relationship was present, the variables of social disconnectedness and greater use of social media were evaluated together. For those participants who indicated feelings of social disconnectedness, 60.9% of participants did not increase their social media use in order to communicate with their romantic partner. In comparison, 39.1% of participants who indicated the same feelings reported increased social media use. The relationship of increased social media use and communication may not hold the same effectiveness in romantic relationships, as these relationships are predominantly more intimate than peer relationships and may require different methods of communication for maintenance.

Figure 13

Level of online fatigue experienced from video calling and audio calling – romantic partners



Discussion

Demographics

For the purposes of our study, we questioned participants about a variety of demographic variables including age, ethnicity, gender, and year of study. This information was gathered in order to potentially illustrate patterns between relationships, communicative behaviours, and participant demographics. We conducted cross-tabulations between our general research questions and the demographics, which ultimately did not reveal any significant overlaps. Due to the small size of our sample, this fact was unsurprising. Perhaps with more intensive and diverse research, correlations between these variables might arise.

The ethnic identities of respondents within this study varied. As discussed previously, the majority identified as Caucasian, followed by Asian, Biracial, Middle Eastern, European, and Indigenous. A small number of participants also identified their ethnic background as Canadian. The disproportionate ethnic makeup develops further issues with generalizing findings. It is unrealistic to accept our findings as truths for all students who may have different understandings of relationships, communicative practices and the COVID-19 pandemic itself based on their backgrounds. The high number of Caucasian participants seems to be consistent throughout the literature, as this demographic does tend to be overrepresented in much of Western research. Regardless, this drastic overrepresentation must be acknowledged, as differences based on ethnicity cannot be entirely accepted or ruled out without a broader representation of ethnic backgrounds.

A majority of participants involved in our study indicated that they are currently enrolled in their fourth year of undergraduate study, with third year being the next largest group. This high representation of fourth year students may be due to the overlapping participation of the required fourth year undergraduate thesis. We assume that due to this course overlap, our peers are more likely to support their fellow classmates in conducting research. As this project is well known by students across various disciplines, we hypothesize that fourth years may be more likely to support their peers because they understand the importance of the project. The higher proportion of upper-level student participants could also be attributed in part to the presumed increased familiarity with the undergraduate experience and involvement in student clubs. As students become more comfortable in their university life and understand the various different areas of participation more, they may be more comfortable participating in research. For the purposes of recruiting participants, our study was shared via student run clubs on Facebook and Email; although these groups were inclusive to all years of study, upper-level undergraduate students may be more inclined to view the posts as interesting. The frequency of participants' ages aligns with the frequency of year of study as 20-21 years of age is the typical age of a third or fourth-year university student.

The responses regarding gender identity highlighted that all participants identified within the gender binary, with the majority of participants identified as female. We have identified a few theories as to why the gender difference appears this way. The first is that social science is a female dominated field (Zafar, 2013). Despite the fact that this survey was shared outside of the social science community, we feel it safe to assume that social science students will be more likely to participate in social science research. The gender norms associated with being a woman in Western society align well with the values of social science and thus we see the over-representation of women in this field (Zafar,

2013). The second explanation to make sense of the abundance of female participants is that this survey is geared towards discussions of communication and relationships; these topics align with the values of the female gender identity and, more importantly, oppose the values of the male gender identity (Zafar, 2013). Women may feel more comfortable discussing the topics covered in this survey as they have been socialized to share their emotions and be open about the difficulties they are having in interpersonal relationships.

Communication and Social Support

Peer Relationships

When responding to questions regarding their peer relationships, participants noted changes in their communicative practices and levels of social support. We believe the disparity in communicative strength partially has to do with different levels of in-person interaction due to safety restrictions put in place to limit the spread of COVID-19. We theorize that those who continue to see their peers in-person, despite it being much less frequent than prior to the pandemic, had stronger communication due to the efforts put into scheduling gatherings. Further, the in-person aspect itself may contribute to perceived strength of communication. Because of the rarity of in-person interactions, there was more pressure on individuals to communicate more clearly and accurately, leading to stronger communication overall.

Our research demonstrated that a majority of participants who frequently saw their peers in-person before the commencement of the pandemic, saw those peers on a less frequent basis following implementation of restrictive measures. Without face-to-face interaction, individuals had to find other means of connecting with their friends. Adami et al. (2020) addressed similar changes in communication standards caused by COVID-19. Humans have long relied on the body for means of interaction, which is no longer a reliable or consistent method of communication. According to the Interpersonal Spacing Theory, this lack of in-person interaction reduces the ability to read body language and non-verbal cues. When comparing levels of strong communication before and during the COVID-19 pandemic, all participants either maintained the same level of communication, or felt they had weaker communication during the pandemic. This decline in strength of communication can be correlated, in part, with the decline of in-person interaction. We theorize that this decline influences the ability to read body language and non-verbal cues, as these significant factors are being taken away from interactions, making it more difficult for participants to interpret the social context (Delamater et al., 2019). In-person interaction has been a critical aspect of communication in the past; now that proximity to one another is limited, individuals must redefine how to connect with peers.

Furthermore, individuals' understanding and experience of communication and social support varies. Bringing in Frame Analysis (FA), we are able to witness the new norms and expectations and how they vary within certain social media platforms; we heavily acknowledge the setting as a detrimental factor within a social interaction. Different methods of communication exist as frames, and each social media platform has a set foundation that influences the flow of interactions on said platform. We understand how the environment can affect the quality and direction of the interaction; for example, when talking on a video chat, one is able to receive responses immediately, in comparison to direct messaging platforms where response times are based on the agency of others. The Perspective-Taking Model (PTM) accounts for these differences, explaining that each

person has their own interpretations of symbols and meanings that are exchanged throughout their interactions (Delamater et al., 2019). With newer, more frequently used spaces for interaction (i.e., online, social media) come new norms and interpretations. Pietromonaco and Overall (2020) suggest previous experiences and relationship processes predict how individuals will adapt to the stressors put in place by the pandemic. This demonstrates the variability of each participant's ability to cope with the changes in communication. Each person interprets meanings and situations differently based on what they have experienced in the past. It is important to recognize that some of these responses are informed by the unique lives of each participant, and that every one of them will respond individually to the effects on their personal relationships. Ultimately, the COVID-19 pandemic has forced new methods of communication, which in turn has influenced how we accept and relay information.

When evaluating participants' perceived feelings of support as well as their ability to provide support in relation to their peers, 49.4% of participants felt they were given the same level of support they were able to provide. We predict that this reciprocated level of support can be explained through the PTM; individuals gradually understand the benefits of receiving support from their peers, which leads to them giving equal levels of support in return. Additionally, we believe this is a form of egoistic helping, which can be defined as "a form of helping behaviour in which the goal of the helper is to increase [their] positive feelings or to receive some other benefit" ("APA Dictionary of Psychology", 2021). Therefore, if individuals are giving strong support to their peers, they may be doing so as they expect it to be reciprocated.

While the benefit to giving support is the potential of receiving it in return, the consequence to giving support is facing online fatigue. When evaluating experiences of providing support to peers, participants faced online fatigue regardless of the level of support they were able to provide. Applying Symbolic Interactionism (SI) to these findings, we understand that we are facing online fatigue as a whole; however, there are individualistic experiences as to how participants are providing support to their peers. To illustrate, if friend one posted on Facebook saying they are feeling sad, friend two might provide support by commenting on the post saying "I hope you get well soon!", but friend three might provide support by Facetiming friend one to check-in and discuss how they are feeling. These two levels of support are drastically different, and these two individuals may perceive their ability to provide support differently. However, they may both face online fatigue due to the digital interaction. Therefore, we theorize that no matter the level of support one is giving, they are at risk of facing online fatigue.

Romantic Relationships

As addressed by Licoppe (2004), communicative practices are essential in the maintenance of relationships. The norms surrounding communication have been drastically impacted by restrictive measures that are being utilized to limit the spread of the COVID-19 virus. As the current global circumstances are unlike anything we have seen, individuals are met with a dilemma surrounding how to negotiate this type of situation. Definitions of how ourselves and others should be participating in daily life are not yet justified. As a result, citizens are met with daily challenges surrounding how they must communicate with those around them, including their romantic partners. Participants in romantic partnerships reported a number of changes in communicative processes

caused by the COVID-19 pandemic, in relation to in-person interactions, feelings of connectedness and perceived social support.

In-person interaction, or lack thereof, proved to be an important predictor of relationship quality. Regardless of whether it was prior to or following the commencement of the COVID-19 pandemic, romantic partners who saw each other on a frequent basis reported strong levels of communication. Participants who did not see their partners frequently reported they did not experience strong communication. This significant decrease in perceived strong communication confirms our notion that the COVID-19 pandemic has had negative effects on communication within romantic relationships.

The restrictions put in place by the government to limit in-person interaction has created an effect on the perceived strength of communication within relationships. Block et al. (2020) stated that physical distancing measures could have adverse effects on the social psychological processes of individuals. This, in combination with our findings, suggests there is a link between in-person interaction and the perceived strength of communication within romantic relationships. Those who continued to see their romantic partners on a frequent basis, may not have experienced the same impacts due to public health restrictions as those who were not able to utilize in-person interaction to communicate. The act of seeing a romantic partner face-to-face requires the interpretation of their non-verbal communication, which may be more beneficial to connection than the methods of communication that are being utilized to communicate presently. By removing this involvement, individuals may internalize a feeling of disconnect with their partner, which in turn decreases strength of communication. As stated above, when discussing the changes observed in peer relationships, we theorize that the decline in perceived strength of communication in romantic relationships can be attributed in part to the current restriction of in-person interaction.

The changes in communication methods have subsequently had an effect on perceived social support in romantic relationships. Due to restricted in-person contact, individuals have taken up a variety of communication methods (i.e., video calling, audio calling, in-person, direct messaging). SI tells us that individuals shape meanings around what information is given to them. While communicating with a partner via text, for example, there is increased opportunity for miscommunication due to ambiguity of messaging. If one partner perceives their side of the conversation as unsupportive, then they may further believe they do not have a strong connection with their partner. If one partner is feeling brought down by an external stressor, conveys this information to their partner, and receives a simple and unemotional response, they may interpret this as an unsupportive partner. As Pietromonaco and Overall (2020) state, a high stress event, like the current pandemic, challenges relationships on a deeper level. Added stressors may impact individuals negatively, which may alter behaviours in communication and perceived social support (Pietromonaco & Overall, 2020). In order to maintain a healthy relationship, partners need to recognize each other's needs and provide suitable social support in response to those added stressors. A larger proportion of respondents indicated that their communication strength was higher than their perceived connection to their romantic partner. Therefore, we are able to draw a link between the feelings of perceived social support and feelings of connection between romantic partners.

Drawing on SI, our results illustrate that as we move farther from utilizing in-person interaction on a daily basis, it becomes more difficult to negotiate meanings during online

social interactions. It becomes challenging to understand what can be deemed supportive when there is essentially no in-person interaction to provide physical social support (i.e. a hug or kiss). According to SI, we make meanings through social interaction, and given that communicating via online means exclusively is a novel experience, we may not have yet created meanings surrounding online social support with those we are close to. As we move through the pandemic, we have the ability to determine what is supportive for us and our partners. However, without the instant communication via in-person interaction, individuals may learn these ways through trial and error, which could result in perceived lower connectedness and strength of communication.

We may also utilize DOTS (Thomas, 1931) to examine perceived social support and communication. Prior to behaving, individuals analyze their role, mental state, and accepted behaviour norms of the situation in order to conduct themselves properly (Thomas, 1931). However, in novel situations, such as navigating how to communicate during COVID-19, there is no blueprint for individuals to create their behaviours from. Finding the definition of the situation provides individuals an understanding of what is expected of them, which we can connect with the perceived changes of communication felt in romantic relationships. When individuals are placed in an ambiguous situation, it is typical to look to others to gather information about what behaviours are appropriate. Without the knowledge of social norms and expected behaviours, it becomes difficult to determine how we should react during interactions. This lack of definition of the situation also demonstrates that we are unaware of how others should react during interactions. The cyclical relationship leads to formation of new norms and expected behaviours, however, due to the isolating nature of COVID-19, they may be individualistic or vary from relationship to relationship.

Due to the nature of the current pandemic, the safety measures put forth by the government to limit the spread of the virus advise individuals to limit their in-person interactions. These restrictions have caused a drastic change in the methods individuals use to communicate. We have long relied on in-person communication and interaction to convey information, ideas, and emotions (Adami et al., 2020). As aforementioned, there has to be a process of re-defining social norms in communication and interaction. Through the process of renegotiating various relationships, individuals have created new norms for interacting via different platforms (i.e., video calling, social media, texting). Bolger and Eckenrode (1991) stated that there is a strong correlation between social integration and reduction of stress during high stress events. Social integration is referenced here as the average number of people an individual interacts with in specific domains (Bolger & Eckenrode, 1991). If an individual, following the commencement of the pandemic, interacts with a higher-than-average number of people than prior to, the perceived strength of support may be higher than their cohorts. This is not an exclusive predictor of strength of communication or support, as quality is more important than quantity in terms of social support for most individuals. Our study sought to understand what methods individuals took to combat changes brought on by COVID-19. Social interaction is a main component to predicting relationship maintenance; if there is no social interaction, then we can assume that relationships will not be healthily maintained.

Adaptation to Physical Distancing ***Peer Relationships***

When examining the disparities between the frequency at which participants saw their peers in-person before and following the commencement of the pandemic, there is an overwhelming decrease. As mentioned above, this is highly influenced by the restrictions set in place during the pandemic to limit the spread of COVID-19. Due to the abrupt change in the nature of interpersonal relationships, there are tangible and intrapersonal consequences on individuals. In regard to their peer relationships specifically, we found that the frequency at which individuals spent time with their peers during the pandemic is correlated to feelings of social disconnectedness. The majority of participants reported infrequently spending time in-person with their peers and felt socially disconnected. We theorize this missing sense of connection is due to the lack of in-person interaction; now with online platforms, levels of intimacy are not as high while physical proximity can no longer be considered, leading to an overall decay in levels of social connectedness. The current literature emphasizes the importance of mundane everyday interactions and how they contribute to our levels of social connectedness (Watson et al., 2021). Prior to the commencement of the pandemic, these everyday interactions were largely taken for granted and their impact went unnoticed; however, due to their rarity now, their impact is much more noticeable. This leads to lower levels of social disconnectedness for those who spend time with their peers in-person more frequently. Furthermore, we can connect this finding to PTM. Because the world has changed (via pandemic), our perspectives of social media platforms and how we now interact with people (i.e. no in-person contact) has to change too.

When cross-examining experiences of social disconnectedness and scheduling time for social interaction as a communication strategy, the majority of participants did schedule time for interaction; however, a majority of those students still felt socially disconnected. This initially was a surprise, as we had understood that scheduling time to meet in-person would increase connection levels due to prior findings. When applying the PTM, we now understand that the normalcy of meeting with individuals during the pandemic is impaired because of the safety restrictions put in place, limiting the level of connection individuals feel. During the pandemic, one may have to choose different activities that vary in the levels of connection they bring; this is in comparison to before the pandemic when they did not have to hesitate in choosing a more public/social location or activity. For example, prior to the pandemic, peers may choose to go to shopping centres, concerts, sports games or restaurants; however, during the pandemic, many of these are not feasible so one may feel less connected with alternative, restricted activities chosen.

When analyzing frequencies at which participants video called their peers before and during the COVID-19 pandemic, data demonstrated a slight increase that was not as drastic as we initially predicted. We initially hypothesized that because in-person interactions were less frequent during the pandemic, video chatting would be a primary method of communication. However, because our findings were not as momentous, we understood that direct messaging platforms were the communication methods most used. We feel as though this might explain how individuals in our modern society appreciate the mediocrity of minimal communication with their peers, over making a conscious effort for quality conversations. We believe this results in an unhealthy level of satisfaction as it affects levels of social connectedness. This is due to the lack of depth that comes with the continuation of surface level interactions that take place on social media.

When testing the relationship between feeling connected and the frequency at which participants video called their peers, there was a correlation between the two. Of the participants who did not feel connected to their peers, the majority video called less than once weekly. We can relate this to SI through the understanding of quality; meanings that we now associate with video calling have changed compared to prior to the pandemic, as we assume that individuals did not appreciate it in the same way before. Even though this alternative is not as satisfactory as in-person interaction, we understand that it is our new norm for communicating with peers. This results in video chatting being associated with more positive emotions; individuals are still feeling connected while attempting to maintain a high quality within their interpersonal relationships as best as they can. For example, before the pandemic, individuals would not feel adequate contentment when video calling their peers as they would receive that satisfaction when they were together in-person, but now because the physical distancing restrictions have affected their in-person plans, they resort to video calling more frequently. Not only do they maintain high qualities within their peer relationships, but they also view video calling in a new light.

Romantic Relationships

Physical distancing due to COVID-19 varied in its impact on romantic relationships. With a generous portion of our sample continuing to see their romantic partners frequently, in comparison to the decrease that appeared in peer relationships, the effects on connectedness appeared differently. Participants were equally as likely to experience disconnectedness from their partner regardless of in-person interaction occurring daily. This suggests that other factors had to be contributing to the relationships that remain feeling socially disconnected from one another. SI's interpretation of social interaction as a meaning making and negotiating process could help explain the difficulty in connection to partners (Blumer, 1986). During COVID-19, there are several different experiences that individuals have on a daily basis; the extreme changes in daily living, as experienced on an individual level, may impact our abilities to negotiate meanings. Social interaction and meaning negotiation commonly took place in-person prior to physical distancing procedures, leaving the current circumstances for meaning making vague and difficult to mutually understand. With this difficulty, couples may find conflict in their newfound differences in understanding, leading to greater disconnectedness to each other.

A second possible explanation for greater disconnectedness with frequent contact lands in the effects of external stressors. The findings of this study lead us to believe that the various confounding factors of COVID-19, that colloquially generate large amounts of stress, are impacting romantic relationships increasingly. As addressed by Luetke et al. (2020), a number of factors including decreased social interaction and separation from loved ones have been linked to poor outcomes that negatively influence relationship processes. We argue that romantic partners likely have a different type of bond than in peer relationships; romantic partners tend to share in life's distress, especially when cohabitating or exclusively spending time with that individual (Pietromonaco & Overall, 2020). According to Pietromonaco & Overall (2020), the pandemic is likely impacting how couple's function together in their daily lives. As with SI, individual experiences differ greatly, however in romantic partnerships, the stressors tend to impact both members. Personal stressors that have been brought on unexpectedly by COVID-19 (i.e., job loss, stress from work entering the home with home offices, etc.) transfer into romantic

relationships (Pietromonaco & Overall, 2020). As learned in studying peer relationships, there is a lack of interaction with peers while most people continue to see their partners frequently; this is evidence that romantic partners are the primary contact of participants. Not having contact with friends regularly may result in these stressors building up, and there is a lack of release or separation from the partner caused by lack of time with peers.

The next variable studied is the impact of scheduling time for one's partner. Results show that a significantly smaller percentage of participants schedule time for their partner than those that do not, and of those that do, it has little impact on the level of connection they feel in the relationship. We theorize that this is because communicating with romantic partners on a daily basis is more natural and a part of routine more so than communicating with peers. As mentioned earlier, participants experience higher levels of social disconnectedness when they do not schedule time for peers; this contrast may highlight the previously discussed 'bond' that is present in romantic relationships and not in peer relationships.

Of the factors that impacted social connectedness, the ability to provide and perceive social support from partners is more evident than scheduling time. Those that experienced more social disconnectedness reported struggling with providing and perceiving social support from their partner; this can connect to stress being transferable between partners and is indicative of COVID-19 related stress impacting how romantic partners perceive one another (Pietromonaco & Overall, 2020). PTM indicates that individuals understand the support that is given to them and reciprocate in equal amounts (Selman, 1973). When perception of one's partner is impacted by external stressors, the perception of support is likely to also be impacted. The inability to successfully perceive social support means that participants may be less likely to reciprocate support to their partners, as indicated by PTM, resulting in greater levels of social disconnectedness.

Of the methods of communication in the survey, a majority of participants report texting their partner daily, followed by video calling and then audio calling. This differs from the analysis of peer relationships as participants reported never audio calling their peers on a daily basis. We theorize that this is caused simply by the cohort that participants are in; a majority of our participants, being 20-21 years of age, are in Generation Z. According to Turner (2015), Generation Z is a largely technology motivated generation. Individuals that have grown up with technology, the way Generation Z has, report enjoying virtual communication more; a majority of participants in the study by Turner (2015) reported preferring to talk to peers virtually over in-person. This helps explain the phenomenon of peers not using audio call as a method of communication during the pandemic. Many may be uncomfortable with this medium depending on the level of which their relationships have reached. This can then help us understand why it is much more common in romantic relationships; the bond that we theorize is important to romantic relationships may allow for Generation Z to find enough comfort in their partners for audio calling to be an appropriate method of communication. For the other forms, we theorize that they are not as popular as in peer relationships because of the percentage of participants that reported having frequent in-person contact with their partners. Video calls may be used to mimic in-person interactions, however when there is no separation of partners, mimicking such interaction is not necessary.

Communication Styles and the Associated Consequences

Peer Relationships

When analyzing the relationship between connection with peers and greater social media use as a communication strategy, we found that of the participants that used social media more, there was a similar sized group between those who did feel connected, those who felt neutral, and those who felt disconnected. This finding relates to SI, in that the effects of using social media immensely depend on the person and how they create meanings through their interactions on social media. Despite the high levels of social media use during the pandemic, all participants are experiencing levels of connectedness differently in their peer relationships, leaving no noticeable trend or correlation. Therefore, it can be concluded that the effect of social media use on connectivity relies on other situational and personal factors. In terms of individuals feeling connected through their greater use of social media, we recognize this finding as they are receiving updates on their peers through social media news-feeds, leading to individuals showing support and appreciation for others (i.e., “liking” a post, “reacting” to a “story”); although minimal and potentially surface level, these small interactions may still bring feelings of connectedness. Diving into the neutral statistic, we can identify this with the PTM as we believe that most individuals accept the surface level of communication with their peers that they receive through social media apps. In regard to feelings of disconnectedness specifically, social media focuses more on highlighting oneself, compared to connecting with peers (such as the function of texting or calling).

When comparing the routine of direct messaging peers before and during the pandemic, we found there was not much change between the two. This is sensible as direct messaging platforms are often part of undergraduate students’ daily lives, even before the pandemic. As a society, the idea that constantly being in communication with others (despite not physically being with them) has been ingrained in our daily routines. This often results in high levels of direct messaging; the pandemic has exacerbated these habits as direct messaging is one of the only methods of communication we still have access to. We can connect this result to FA by comparing the use of direct messaging platforms, in-person time, and [audio/video] calling. Before the pandemic, direct messaging was used a moderate amount, in-person time was frequent, and the rate of calling was exceptionally low. When looking at the data regarding the time during the pandemic, direct messaging has maintained its moderate frequency, in-person time has unquestionably decayed, while video calling specifically has increased. Returning to the mediocrity concept, individuals have accepted the lackluster quality of using social media to contact their peers. Therefore, along with our previously mentioned data on the relationship between feelings of connectedness and frequency of video calling, there is an understanding that further connectedness can be reached through video calling instead of those platforms.

When testing habits of audio calling before and during the pandemic, we found there was a general decrease in the frequency at which participants audio called their peers. We infer that participants were not audio calling their peers much before the pandemic as they were able to spend time in-person, despite there still being a small group of individuals who were audio calling their peers. When addressing this through the DOTS, we theorize that individuals are audio calling their peers even less during the pandemic because they are now engaging with other digital methods of communication that bring a stronger sense of connectivity, such as video calling. Focusing on the PTM, we are not

able to spend as much time in-person, so we now have to look for other ways to visually connect with peers, something that is not brought upon by audio calling.

When evaluating online fatigue and direct messaging during the pandemic, there is a positive linear progression; the more one uses direct messaging platforms, the more likely one is to experience online fatigue. We hypothesize this is due to the wide assortment of direct messaging platforms there are to maintain one's presence (i.e., Snapchat, Facebook Messenger, etc.); it can become overwhelming when using multiple platforms as one has to juggle various priorities instead of focusing one's energy on a singular platform. Furthermore, it might be assumed that individuals are using direct messaging to combat a sense of fear of missing out, otherwise known as FOMO (Hetz et al., 2015). Therefore, individuals may check social media and numerous direct messaging platforms more frequently as they do not want to feel like they are disconnected from their peers, resulting in greater online fatigue. Additionally, checking these platforms more often leads to the potential of passive social media use; if one is already on the app, their natural urge to scroll takes over due to the convenience. Passive social media use has been linked to feelings of depression and anxiety (Escobar-Viera et al., 2018). Further, the extensive utilization of social media is similarly linked to feelings that negatively impact psychological well-being, and produce greater levels of social media fatigue (Dhir et al., 2018). As researchers, we analyze this relationship as a continuous cycle where individuals attempt to maintain their presence on direct messaging platforms, continue engagement to combat FOMO, and then use social media in a passive manner, resulting in further online fatigue. This increase in fatigue may make it difficult to keep up with direct messaging, continuing the cycle.

Despite some participants still experiencing online fatigue while audio calling, the rates of fatigue were relatively lower than the other analyzed communication methods. Specifically, if audio calling peers daily, participants were equally as likely to face online fatigue as they were not to. Returning to both DOTS and PTM, we acknowledge how the lack of in-person interaction creates a certain minimum level of online fatigue, but may not be exacerbated by audio calling; we must also recognize how individuals may experience online fatigue from other platforms. In other words, their online fatigue may not necessarily be caused by audio calling. Moreover, experiences of online fatigue are not as intense with audio calling as they are with other methods of communication (i.e., video calling or direct messaging), due to the lack of visual focus one is required to have on screens. For example, one is able to be on a phone call with a friend while physically multitasking. However, if on a video call, one is most likely to visually pay attention to the other person, resulting in higher levels of online fatigue.

When assessing online fatigue with video calling in the pandemic, we found that across all frequency categories, at the very minimum, approximately three quarters of participants developed a sense of online fatigue. Connecting this finding to SI, we acknowledge the various meanings that individuals can associate with video calling their peers. One person might obtain a sense of connection, but still experience online fatigue because of the unavoidable digital nature of the interaction. Another person may view video calling as a reminder of the limits to in-person interaction that exist and become fatigued through missing the lifestyle before the pandemic; however, they might continue to engage with video calling as it is their only method of communication. Despite the individual meanings related with video calling, an inevitable sense of online fatigue may

be experienced. Likewise, DOTS and FA can be practiced in this finding as we analyze the new norms the pandemic has curated. From here, we can identify two perspectives; (1) the gradual increase in online fatigue as one continues to use video calling more, and (2) the immediate understanding that video calling will cause online fatigue, prompting the fatigue consequence preemptively. Although the effects highly depend on one's view of online fatigue and video calling, they will still exist and bestow upon oneself.

Romantic Relationships

Unlike in peer relationships, social media did not have a strong impact on romantic relationships; level of connectedness to one's partner did not differ with increased social media use from COVID-19. As discussed previously, there is a strong difference between passive and active social media use, and the impacts it can have on feelings of connection and inclusion. We theorize that participants are more likely to use social media passively for peer relationships, and actively for romantic; passively browsing social media sites will provide much more exposure to peers than to other couples that could lead to social comparison and feelings of FOMO. Active social media use promotes feelings of inclusion and reduced loneliness (Thorisdottir et al., 2019). When interacting actively with partners, there may not be the same negative outcomes that social media can have on one's well-being. In this way, the differences in social media use between peer and romantic relationships may help mitigate feelings of disconnectedness, or at least avoid furthering the separation between partners.

The influence of SI is also significant in this analysis. Each person is going to have their individual experiences with social media, and there may be vast differences in how increased social media impacts our population. It can be theorized that variations in connectedness could also be caused by confounding factors such as external stressors from COVID-19, as we have discussed the impact this has on romantic relationships. It is important to consider individual and contextual factors that may predict how and why individuals react to altered realities (Pietromonaco & Overall, 2020). These may potentially influence one's perception or acceptance of online communication methods and similarly predict their likelihood of utilizing them as a combative method for communication throughout the pandemic.

Other forms of communication in romantic relationships create online fatigue, similar to the effects in peer relationships. Video calling, a commonly used form of communication in romantic relationships, shows higher levels of online fatigue in comparison to audio calling. Unlike in peer relationships, however, audio calling is slightly more common amongst romantic partners. As mentioned by Licoppe (2004), audio calls help alleviate online fatigue by providing a break from looking at screens. We theorize that because audio calling is more prevalent in romantic relationships, this may act as a mitigator for some relationship stressors caused by COVID-19; with peers experiencing higher levels of social disconnectedness from increased social media use, the prevalence of audio calling may be the factor that generates more connection between romantic partners and helps alleviate those feelings.

Conclusion

Summary

Our research aims to address how the COVID-19 pandemic has influenced the ways individuals communicate with their peers and romantic partners. We found literature to preface our research, outlining the following concepts: relationships, communication, adaptation, and digital communication and their consequences. Using the following theories: Symbolic Interactionism, Definition of the Situation, Perspective-Taking Model, Interpersonal Spacing, and Frame Analysis, we looked at the changes in proximity, interpretations of meaning and feelings of connectedness, and how these may explain the experiences of individuals in relation to the changing communicative processes. With an online anonymous survey, we gathered participants from the McMaster student body to report on their perceptions of communication, feelings towards relationships, and adaptive methods of interaction prior to and throughout the course of the pandemic. We address multiple limitations that may inform future research, with hopes that more extensive examination will be conducted in this topic area. We ultimately found that though individuals have attempted to combat the in-person communication barriers put in place by the COVID-19 pandemic, the use of alternative methods does not entirely mitigate feelings of social disconnectedness or lack of social support, and often leads to feelings of online fatigue.

Limitations

There are multiple limitations to this study worth mentioning, in regard to our participants, research process, and literature. The first limitation is the lack of previous research on the concept of communication in relation to the COVID-19 pandemic. When we formed this research especially, there were few extensive studies on the connection between COVID-19 and relationship processes, simply because not much time had passed since the commencement of the pandemic. Due to this, it was difficult to begin our study utilizing previous knowledge and theoretical frameworks, as the pieces that did exist varied in terms of geography, field of study, and specificity. This limitation does however reinforce the importance of our work, as communicative processes will continue to be altered as the pandemic progresses and should be addressed throughout these developments.

Our next limitation relates to the number of participants gathered ($n=75$). Due to the small stature of the sample size, our findings cannot be widely generalized among the student body or the general population. The reported gender identifications reveal that a majority of our participants classified themselves as female (93%). The remaining few participants identified as male (7%). Further, our population sample is disproportionately represented by Caucasian participants (49.3%). Finally, all of our participants identified between the ages of 18 and 29. We found few significant differences across gender, ethnicity or age within our results. It is difficult to determine whether the lack of difference is due to the small sample size and lack of true representation, or other extraneous variables. While our results have implications for how and why communicative practices have been influenced and navigated throughout the course of the COVID-19 pandemic, it is not appropriate to assume that these are true among the entirety of the McMaster student body or general public. Further research is required in order to develop insights that more accurately represent wider student and public populations.

To expand on the previous limitation, we received a smaller number of responses within the romantic section, with a total of 57 respondents. This smaller sample size

makes it more difficult to generalize findings across all experiences of romantic partners during this time. Further, our study collected individual responses, which means that it is likely that in most cases we only gained insight from one side of a romantic relationship. As there is much variability in romantic partnerships, this study alone cannot encompass the many factors that contribute to relationship processes, stress and maintenance. In terms of future research, it would be beneficial to perform concentrated research on romantic relationships, communication, and interactions, and collect responses from both sides of the relationship for comparative analysis.

Another limitation to our research is the lack of qualitative insight. Our team utilized quantitative and statistical analysis in the process of our research, which proved beneficial as an informative agent. Although the survey provided opportunities for qualitative responses, this was optional and use by participants was minimal. Our work focused on communication, which is a concept that is diversely defined. Each individual has alternate preferences and viewpoints that impact how and why they communicate with their peers and romantic partners. Our quantitative data provided us with a general overview of our participants' experiences. However, it does not allow us to look deeper into the causes of these phenomena. It is important to recognize that every individual and every relationship is unique. The use of qualitative responses or interviews could further assist in understanding this variability.

Time is an added limitation of our research. This includes both time constraints with respect to the project and the timing of our study within the COVID-19 pandemic. As a student research study, this project was limited to a specific timeline. This was unavoidable, but with a greater allotment of time, we may have been able to place more focus on demographic understanding of data analysis. We similarly could have gathered more participants, which may have provided further insight into relationship and communication processes throughout this time. In addition, these past months were a mere fraction of the COVID-19 pandemic. If we were able to conduct this research over a longer period of time, we may have potentially generated results that were representative throughout the progression of COVID-19, rather than at one point in time. When we formed this research, we were only six months into the pandemic. In the short time since we developed this study, and even since we collected data, there have been a number of global developments (i.e., additional lockdowns, vaccination rollouts) that may have had additional effects on peer and romantic relationships. Future research may consider following the trajectory of a relationship throughout the COVID-19 pandemic to gain insight into how the ongoing stressors influence communication, levels of social support and connectedness.

Finally, COVID-19 had its own unique and significant impacts on the study that could have limited the final data analysis. Most of these limitations, ironically, had to do with the lack of in-person interaction between the members of our team and increased difficulty of technological platforms. Not being able to meet in-person created limitations in the pace and quality of data analysis, as working as a team was exponentially more challenging. PSPP is one aspect that was increasingly more difficult because of online work. This is a platform that none of our group members had any prior experience with, so it took us time to get comfortable with data analysis. Having to do this over Zoom was frustrating, as Zoom did not allow for screens to be shared while working on the software resulting in one person having to control and dictate what they were seeing on their screen. This

created barriers in our team's ability to efficiently and collectively analyze the data. Furthermore, COVID-19 resulted in the lack of in-class time with our instructor and supervisor, Dr. Sarah Clancy. Although we were provided with the needed information and she was available via email, Zoom, occasional synchronous classes, group meetings, and office hours, the lack of weekly in-person class created limitations in our efficiency and the capstone experience in general. Each of these limitations, while unfortunate, were essentially unavoidable. We also acknowledge that this particular study would not have been possible without COVID-19's impact on the world, and the knowledge gained from this study remains important for future experiences with pandemics.

Ultimately, there were multiple limitations throughout the process of this research. We recognize that these may have influenced our findings, however, do not believe that they prove detrimental to the overall impacts of this study. None of these factors will impact the well-being of our participants, and each may be addressed by future research with ease.

Significant Insights

This study revealed a number of insights that may prove informative to future research. One of our main findings was that individuals did in fact experience changes in their communicative processes due to the COVID-19 pandemic. With restrictions in place, individuals were forced to utilize alternate methods of connecting with one another. While some participants were able to mitigate levels of social disconnectedness and maintain healthy communication, it was variable among the rest. Strength in communication was often reported alongside the use of in-person interaction, suggesting that while online communication is a feasible alternative, it does not always meet the same standards as face-to-face interaction. The amount of in-person interaction was a significant predictor of levels of social connectedness and strength of communication in both peers and partners. Alternatively, those who reported greater levels of social disconnectedness and weak perceptions of social support saw their peers and partners on a less frequent basis. To counter the inability to see others in-person, participants reported instead using methods such as phone calling, video calling, and social media. Frequent use of these alternatives often leads to online fatigue, and respondents continued to report feelings of social disconnectedness, and difficulties providing and receiving social support.

As discussed previously, our research demonstrated that while individuals utilized different communicative agents in order to remain connected to their peers, they still reported a significant degree of social disconnectedness. While we initially hypothesized that individuals might experience reduced efficiency in communication, and as a result, weaker levels of connectedness, we suggested that the use of alternate platforms for interacting might mediate this result. However, miscommunication was not reported as heavily as we would have expected and was not significantly connected to respondents' high levels of social disconnectedness. Further, we found that while social media, phone calling, video calling, direct messaging and other forms of communication were used at some level of frequency, it was not effective in reducing social disconnectedness. We suggest that it is the lack of in-person interaction that ultimately causes this effect within individuals in peer and romantic relationships. This is an important finding, as it must be understood that regardless of the type of alternative communication, individuals may still experience adverse social or psychological effects due to the lack of in-person contact.

Further research should focus on what specific methods of communication are most proficient in reducing these feelings of social disconnectedness.

Overall, regardless of the type of relationship (peer or romantic), or type of platforms utilized, most participants experienced some level of online fatigue due to the increased usage of online communication techniques. This is plausible during COVID-19 as a majority of communication practices have been moved to the virtual atmosphere. We further suggest that this heightened level of online fatigue may be in part a result of the greater use of social media on a passive level, although further research is required to address this relationship specifically.

An additional insight worth mentioning in relation to romantic partnerships involves the build-up of stressors being placed on those relationships. Respondents in the romantic portion of our research often reported seeing their partners in-person much more frequently than did peers. This may be due to the fact that romantic partners became primary points of contact for one another. Despite this frequency, many participants still reported feelings of social disconnectedness. We suggest this is due to lack of peer contact, which is still an important factor in social well-being. Something that may be worth further research is the direct impact that concentrated interaction may have on individuals within romantic relationships. As they are less frequently seeing peers, and more frequently seeing their romantic partners, there may be greater stress placed on that relationship. Combining previous relationship difficulties with current pandemic stressors may have a variety of impacts on individual and relationship processes.

On a broader level, the relationship between COVID-19 and additional stressors is a field that requires further attention. Accumulation of relationship, socioeconomic and other daily stressors in addition to COVID-19 related restrictions may have its own array of unique impacts on individuals in peer and romantic relationships. Further research may allow for the development of targeted interventions to mitigate such effects.

One final insight has relation to the use of external supports. When asked about the use of online or on-campus services throughout the course of the pandemic, the majority of participants reported using none. No participants used campus services and only 3.5% of participants sought out assistance online. This could suggest that either participants are unaware of the many services available to them at this time, or they do not feel comfortable utilizing them. Once again, it is difficult to generalize these statistics due to the small sample size. However, it does raise questions about who has or continues to use online help services, and the perceived efficiency or effectiveness of these programs. Future research should address what types of online services would be of interest to students and how they can be enhanced to better serve the McMaster community.

Concluding Thoughts

Communication and social interactions are imperative to the development and maintenance of relationships. Our research team wanted this work to inform and remind the McMaster student body of the importance of this fact. By providing insight into the changing communicative processes caused by the current global circumstances, students may be more aware of the changes in their relationships and work to more effectively combat them. Further research must be done in order to determine proficient intervention strategies. However, we believe that greater awareness about one's relationship, communication strategies, and resulting emotions or feelings may

encourage individuals to recognize how and where they can work to improve. We hope that this work may inform additional research in this topic area, conducted with larger sample sizes and across educational institutions, or even within the general public to increase generalizability. This study shows us that in times such as this, our relationships remain essential to our well-being. The COVID-19 pandemic has placed many stressors on individuals' peer and romantic relationships. The changes in communication resulted in a number of adverse effects including social disconnectedness and online fatigue. Future research should aim to focus more specifically on the mechanisms that cause these changes. It will be important to address these issues as the COVID-19 pandemic progresses into the foreseeable future.

Acknowledgements

We would like to give appreciation to Dr. Sarah Clancy and the Social Psychology program for making this project possible. Dr. Clancy, as always, was a strong, leading force who gave us insight and support whenever needed. Without her, our study would not have been such a success. We would like to extend our gratitude to the many individuals who supported us throughout the process of this study. Thank you to those who participated in our survey, as it was their openness that guided and made our work possible. By sharing their experiences, they taught us innumerable things about communication, relationships, and the process of research; for that we are grateful. To our family and friends who supported us through every long night and deadline, thank you. This work gave us knowledge, experience, skills and friendships that we will each take with us in our future endeavours. Thank you all for making that possible.

References

- Adami, E., Al Zidjaly, N., Canale, G., Djonov, E., Ghiasian, M. S., Gualberto, C., ... & Wildfeuer, J. (2020). PanMeMic manifesto: Making meaning in the Covid-19 pandemic and the future of social interaction. *Working Papers in Urban Language and Literacies* no 273, 273.
http://eprints.whiterose.ac.uk/164017/1/wp273_adami_et_al_on_behalf_of_the_panme.pdf
- APA Dictionary of Psychology. Dictionary.apa.org. (2021). Retrieved 2 April 2021, from <https://dictionary.apa.org/egoistic-helping>.
- Block, P., Hoffman, M., Raabe, I. J., Dowd, J. B., Rahal, C., Kashyap, R., & Mills, M. C. (2020). Social network-based distancing strategies to flatten the COVID-19 curve in a post-lockdown world. *Nature Human Behaviour*, 1-9.
<https://www.nature.com/articles/s41562-020-0898-6>
- Blumer, H. (1986). *Symbolic interactionism: perspective and method*. Berkeley: University of California Press.
- Bolger, N., & Eckenrode, J. (1991). Social relationships, personality, and anxiety during a major stressful event. *Journal of Personality and Social Psychology*, 61(3), 440.
<https://psycnet.apa.org/record/1992-05415-001>
- Delamater, J. D., Myers, D. J., & Collett, J. L. (2019). *Social psychology* (Ninth ed.). New York, NY: Routledge.
- Dhir, A., Yossatorn, Y., Kaur, P., & Chen, S. (2018). Online social media fatigue and psychological wellbeing—A study of compulsive use, fear of missing out, fatigue,

- anxiety and depression. *International Journal of Information Management*, 40, 141-152.
https://www.sciencedirect.com/science/article/pii/S0268401217310629?casa_token=0W7LFFuRSQAAAAA:sIYIxAN7UxWGGw9QZGaAK7UNssVgkRBiIM51kWLBSm9xqwFxAInQdM3X4FQx7YLDfUbtX1WaRhE
- Escobar-Viera, C. G., Shensa, A., Bowman, N. D., Sidani, J. E., Knight, J., James, A. E., & Primack, B. A. (2018). Passive and active social media use and depressive symptoms among United States adults. *Cyberpsychology, Behavior, and Social Networking*, 21(7), 437-443.
<https://www.liebertpub.com/doi/pdfplus/10.1089/cyber.2017.0668>
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press.
- Hetz, P. R., Dawson, C. L., & Cullen, T. A. (2015). Social media use and the fear of missing out (FOMO) while studying abroad. *Journal of Research on Technology in Education*, 47(4), 259-272
https://www.tandfonline.com/doi/pdf/10.1080/15391523.2015.1080585?casa_token=bqzi0q56WGsAAAAA%3Atn0kqf27zGCmdZ_qiGybve-ik_OhVX_SDXuKW5nnChQG9IEdwf0rd4UqJI-Q1qDabtUEyf_tE8qA&
- Licoppe, C. (2004). 'Connected' presence: the emergence of a new repertoire for managing social relationships in a changing communication technoscape. *Environment and planning D: Society and space*, 22(1), 135-156.
<https://www.dhi.ac.uk/san/waysofbeing/data/communication-zangana-licoppe-2004.pdf>
- Luetke, M., Hensel, D., Herbenick, D., & Rosenberg, M. (2020). Romantic relationship conflict due to the COVID-19 Pandemic and changes in intimate and sexual behaviors in a nationally representative sample of American adults. *Journal of Sex & Marital Therapy*, 1-16.
https://www.tandfonline.com/doi/pdf/10.1080/0092623X.2020.1810185?casa_token=7dyanLRjw-wAAAAA:mrhj-5W9XoDrvN5k2hOxISHHCNteU-aQFJwNERYPqpsSjxAJ_c4aT92hZsfxiMfLH5C4DAb8KAHCWA
- Moore, K. A., & March, E. (2020). Socially connected during COVID-19: Online social connections mediate the relationship between loneliness and positive coping strategies. <https://assets.researchsquare.com/files/rs-35835/v1/2eef6c61-199b-4014-8d1e-5dc8911f7a48.pdf>
- Pietromonaco, P. R., & Overall, N. C. (2020). Applying relationship science to evaluate how the COVID-19 pandemic may impact couples' relationships. *American Psychologist*.
- Ritzer, G. (2003). *The blackwell companion to major contemporary social theorists*. Malden: Blackwell Publishing. <https://psycnet.apa.org/fulltext/2020-54105-001.pdf>
- Selman, R. L. (1973). A Structural Analysis of the Ability to Take Another's Social Perspective: Stages in the Development of Role-Taking Ability. Philadelphia, PA. <https://files.eric.ed.gov/fulltext/ED081486.pdf>
- Solomon, D. H., & Vangelisti, A. L. (2010). *Establishing and maintaining relationships*. Na. https://www.researchgate.net/profile/Anita-Vangelisti/publication/287403443_Establishing_and_maintaining_relationships/links/5932a95f45851553b6b403f6/Establishing-and-maintaining-relationships.pdf

- Steeves, K. (2019) [Lecture]. *Symbolic interactionism*. SOCPSY 2YY3, Theories in Social Psychology. Hamilton, ON, Canada: McMaster University.
- Thomas, W. I. (1931). The definition of the situation. In J. G. Manis & B. N. Meltzer (Eds.), *Symbolic Interaction: A reader in social psychology* (Second ed.) (pp. 254-258). Boston, MA: Allyn and Bacon.
- Thorisdottir, I. E., Sigurvinsdottir, R., Asgeirsdottir, B. B., Allegrante, J. P., & Sigfusdottir, I. D. (2019). Active and passive social media use and symptoms of anxiety and depressed mood among Icelandic adolescents. *Cyberpsychology, Behavior, and Social Networking*, 22(8), 535-542.
https://www.liebertpub.com/doi/pdfplus/10.1089/cyber.2019.0079?casa_token=077M9ddyn8AAAAA:qtMzPR5Tp_PVJ9htU7tUgR7s70_3T1Hm_1dGDw7KvJiEDUkcyKH_LxEFIQYw6wLiYF-MMRYt4DZ_o4YPa
- Turner, A. (2015). Generation Z: Technology and social interest. *The journal of individual Psychology*, 71(2), 103-113. <https://muse.jhu.edu/article/586631/summary>
- Watson, A., Lupton, D., & Michael, M. (2021). Enacting intimacy and sociality at a distance in the COVID-19 crisis: The sociomaterialities of home-based communication technologies. *Media International Australia*, 178(1), 136-150.
<https://journals.sagepub.com/doi/pdf/10.1177/1329878X20961568>
- Zafar, B. (2013). College major choice and the gender gap. *Journal of Human Resources*, 48(3), 545-595.
https://www.jstor.org/stable/pdf/23799096.pdf?casa_token=IF2ZyeSkrFoAAAAA:NhMiF-SDOW0JZKUM9IVt9w5stBoUSVQOnLqjeJE7XU_xke6bb7m78oiL6A21iONP0tqldEMG0FOb_vgwA_veYNVla8h6vy0e6LR2vrFAhIHizW2B4sAO