Tackling TikTok:

Motivations, Connection, and Physiological Stress among young adult TikTok users in Aotearoa New Zealand

Senior Honors Thesis in Anthropology

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Abstract

Over the past two decades, technologies such as smartphones and their component applications have become integral in many individuals' daily lives. This is especially true among young adults living in Tāmaki Makaurau (Auckland) Aotearoa New Zealand, a diverse cultural context where social media, including TikTok, are used to disseminate cultural knowledge as well as for entertainment and social connection. For these young adults, social media platforms played a pivotal role in virtually connecting them with others throughout the isolating lockdowns of the COVID-19 pandemic. As such, this thesis explores how experiences of phone and TikTok use impact perceptions of social and cultural connectedness. Additionally, it explores how TikTok use affects young adults' autonomic nervous system functioning and how differential phone and app usage may moderate those effects. Using a mixed methods approach of surveys, interviews, and experimental design, I find that motivations for TikTok use impact participants' (N=60) sense of social and cultural connectedness on and offline. Many young adults feel that TikTok has positive impacts on their sense of connectedness as it supplements their social interactions with friends and connects them to various communities that they may have more limited access to offline. However, there were a few young adults who felt that excessive TikTok use led to social isolation and disconnection. Evaluating heart rate variability, I also find that watching TikTok has a physiologically relaxing effect on participants. Yet, excessive phone use results in lower baseline heart rate variability which may indicate potential detrimental health effects including poorer cardiac functioning, susceptibility to stress and disease, and worse mental health outcomes. This work sets young adults' experiences of the digital world center stage, utilizing a biocultural lens to uncover both the effects of virtual connectedness and the current and potential future health implications of digital engagement.

Chapter 1 Introduction

Preface

I was 10 or 11 years old sitting in the backseat of my mom's 2005 Mazda Tribute with a friend when she turned to me and asked, "Have you ever heard of Instagram?" Within the next five minutes, I had my first social media account where I could post and see virtually anything. In the moment it felt so benign, but those five minutes plugged me into a world of social media that I have not left since. Apps like Instagram and Snapchat quickly became the predominant ways I chatted with friends online during middle and high school. We would send each other funny or relatable memes and, eventually, comical videos when that type of content was integrated into social media platforms. At school, I would hear my classmates quote viral videos and realized I would be considered cooler if I understood their references and could quote things back. By the time I was in my late teens, the importance of social media was undeniable. The apps were more than just something to post on, they were a source of entertainment and connection. As they grew alongside us, they became extensions of our personalities.

Yet, the introduction of TikTok during my last year of high school was awkwardly received by myself and my peers. It was *embarrassing* to have a TikTok account because that's what everyone on other social media platforms was saying. The app was the butt of jokes until the isolation and loneliness of the COVID-19 pandemic suddenly made being on TikTok *cool*. It gave you everything you could have wanted. Entertainment. Humor. DIYs. Recipes. Book recommendations. TV show analyses. Dance trends. It was a gold mine of things to do from the comfort of your home if not your bed. And, better yet, it was so easy to send videos to your friends and feel connected by watching the same 15-second video. I would sit in my room and scroll and scroll and scroll day after day.

I look back at this unhealthy use and know that as I wasted more and more time on TikTok, ultimately, it did not make me feel happier. Although it did satiate boredom at the height of lockdown and make me feel more connected when I needed it to, it also led me down a path of chronic social media use that was really hard to break even as in-person social interactions were allowed. As I thought about my own experiences with social media and how it has affected my life, I became extremely interested in the intersection of social media use, connectivity, and well-being. I could not help but wonder whether other young adults had felt this same way and whether their social media use behaviors had outlasted the isolation of the pandemic. Above all, I was curious as to how this chronic use may have detrimental health impacts on young adults like me.

Background

Human physiology has evolved to respond to environmental factors for millennia; however, rapid technological advancements continuously introduce evolutionarily novel exposures. Advancements such as smartphones and social media platforms that have become intrinsic in many people's day-to-day lives have the power to completely alter how individuals interact with the social environment around them. This is especially potent when considering how social media platforms enable users to participate in digital social networks as well as access unprecedented amounts of unfiltered information. Such behavioral shifts can result in broad sociocultural changes that have important implications for human biology and health. Yet, there has been minimal attention across biocultural research on the effects of smartphone and social media use on basic aspects of human physiology. As such, there is substantial opportunity for anthropological engagement in the intersection of technology and human health.

Studying the effects of this intersection among young adults is fruitful as many have likely been exposed to and have interacted with online communities for the vast majority of their lives (Miller et al. 2016). How and why social media apps are used among young adults in Auckland Aotearoa New Zealand is especially interesting to investigate following the COVID-19 pandemic during which social interactions were forced to migrate into the virtual because of multiple strict, mandated lockdowns. TikTok, a short-form video-sharing app, rapidly rose to global popularity, providing users with quick snippets of what their friends, family, and complete strangers were doing at any given moment. Not only was TikTok the most downloaded app of 2020 (Black 2021), but its user base has continued to grow to over 1.5 billion active monthly users (Iqbal 2023). However, social media can quickly become a distraction that detracts from time spent offline and with other people. Young adults may have developed phone and social media use habits that have had lasting effects on how they spend their free time and interact socially post-pandemic.

Accordingly, TikTok may contribute to problematic use patterns that manifest as staggeringly high amounts of phone screen time. The app's curative algorithm creates user-specific "For You Pages" by utilizing content preference data to draw users back to the app. Its ease of use and accessibility augment TikTok's compelling nature that encourages users to return for viewing session after viewing session. Though not always the case, this chronic use can be the root cause of less time spent with family and friends and more time spent in isolation (Sun and Zhang 2021). These high amounts of time spent on the platform as well as the type of content users have access to have recently sparked controversy resulting in TikTok implementing screen time limits on the app for users aged 18 and below as recently as March 2023 (Maheshwari 2023). However, this effort may be futile as users can input a password that allows

them to continue scrolling after reaching that 60-minute mark. That is, even as measures are being put into place to reduce screen time in the name of improving well-being, young adults are finding ways to bypass them in order to spend their time online rather than offline. It is therefore important to weigh how motivations for use—for example, seeking connectivity or alleviating boredom—play a role in why young adults choose to use social media.

The importance of motivations for use becomes clear when reflecting on the findings of diffuse scholarship that has begun to tackle these topics. Prior research proposes the idea of a social media-social connectedness paradox in which social media users "join" online communities that ultimately become a source of both connection and alienation (Allen et al. 2014). The potential for alienating feelings is likely related to the displacement of face-to-face interactions with social networks as noted above (Winstone et al. 2021). As such, extreme or chronic social media use has been found to negatively predict social connectedness among some young adults (Savci and Aysan 2017). However, for other young adults, the strength of this negative association was found to be highly dependent on their motivations for social media use (Ryan et al. 2017).

While prior research has demonstrated some potential negative impacts of high social media use, there is a lack of anthropological research concerning social media's potential physiological effects, despite well-known connections between the physiological stress response—which is affected by audiovisual stimuli—and mental health and well-being (Hourani et al. 2020). A select few studies have only scratched the surface of this topic, finding that individuals with depression have lower baseline heart rate variability than those without depressive symptoms and that high social media use is correlated with an increased risk of depression (Jangpangi et al. 2016; Margousian 2020). It is vital to begin investigating the health

implications of phone and social media use through the lens of physiological stress and autonomic nervous system functioning as chronic stress may predispose individuals to health risks later in life (Mariotti 2015).

Research Aims and Questions

My research aims to explore the experiences of young adults living in Auckland Aotearoa New Zealand as they relate to phone and TikTok use. As smartphones and their component apps have become commonplace, the digital world at our fingertips has become a growing and significant subset of our lived experience and culture. Yet, how and why young adults choose to spend time using them may impact their health and well-being. As such, the goal of this thesis is twofold:

1. **Explore how experiences of phone and TikTok use impact perceptions of social and cultural connectedness**.

Approaching the first aim, I engaged in semi-structured interviews with young adults where I explored the following questions: What are the motivations for TikTok use and how have these changed over time? How does TikTok use affect perceptions of social and cultural connectivity? How important is the social connection aspect of TikTok compared to other reasons young adults may use the app? And, do young adults perceive TikTok as negatively or positively affecting their well-being (e.g., social, mental, physical, etc), and in what ways?

2. **Assess how TikTok use affects young adults' autonomic nervous system functioning, and how differential phone and app usage may moderate those effects**.

For the second aim, I used an experimental design to assess the following questions: What are the effects of viewing TikTok content on heart rate variability, an indicator of physiological

stress response? Are there differences when viewing curated versus non-curated content? How might different amounts of time spent using one's phone and/or TikTok affect autonomic nervous system functioning? And, are there associations between phone and TikTok screen time with depression and anxiety?

I chose to focus on young adults in Auckland because of the demographic's likely exposure to social media platforms from an early age as well as their shared experience of four incredibly strict lockdowns in Aotearoa during the COVID-19 pandemic (Mayron 2021). Social media platforms including TikTok may consequently play a crucial role in how young adults connect with friends and communities both in and outside of Aotearoa. There is also the opportunity to learn about different motivations for TikTok use and gain insight into the ways individuals interact with the platform differently. In doing so, we are able to identify the relative importance of TikTok to young adults and contextualize their physiological stress response with their lived experiences.

In taking a biocultural approach to studying physiological stress responses to social media and phone usage, this project will further anthropological knowledge about the physiological impacts of high social media use. Further, while other research has focused on the relationship between social media use and social connectedness, this research will also explore the role of cultural connectedness as a motivator for social media use. Thus, this thesis advances our understanding of how aspects of our newly digitally-based world impact human physiology and well-being. It will also continue shifting biocultural anthropology scholarship to include the virtual as an important part of our cultural experience.

Chapter outline

This thesis is divided into six chapters including the present Introduction (Chapter 1). Chapter 2 covers the methodology of the study, summarizing the mechanics of the mixed methods approach consisting of an experimental component as well as semi-structured interviews. Chapter 3 briefly discusses findings related to participants' motivations for why they first began using and why they continue to use TikTok. Chapter 4 discusses the complexities of connection and disconnection as a result of TikTok use, detailing the ways in which young adults' motivations shape their perceptions and experiences with the social media platform. Chapter 5 considers the impacts of TikTok and phone use on autonomic nervous system functioning and mental health. The chapter places participants' perceived positive and negative experiences in concert with the quantitative data collected during the experimental component of the study. Chapter 6 concludes the thesis with a summary of key findings and discussions on limitations and recommendations for future research.

Chapter 2 Methodology

Setting

Data were collected from June - August 2022 in Tāmaki Makaurau (Auckland), Aotearoa NZ. Recruitment materials were posted on the social media platforms Facebook and Reddit, placed across the University of Auckland and Auckland University of Technology campuses, and distributed to potential participants via email by anthropology professors at the University of Auckland and researchers at the Whariki Health Research Group in the College of Health, Massey University. Young adults living in the Auckland area were invited to participate in a short data collection session gathering biometric data and qualitative information about their social media use. Data collection sessions were held in a laboratory space provided by the Department of Anthropology at the University of Auckland, Grafton Campus.

Auckland was selected as the study site due to the population's unique experience of multiple strict, mandated lockdowns unlike any experienced in the United States. From March 2020 to the end of 2021, Auckland underwent four lockdowns with one lasting as long as 107 days. During these lockdowns, residents were unable to see their family, friends, and communities in person for months on end. As such, many Kiwis in Auckland endured experiences of isolation and loneliness with the majority of social interactions shifting to the virtual. Additionally, Auckland is a city rich with ethnic and cultural diversity and is home to more than 180 ethnic groups. Further, the city has two of the country's largest universities—the University of Auckland and Auckland University of Technology—as well as satellite campuses for Massey University. The University of Auckland—from which the majority of participants haled—has a student body numbering over 40,000 with ethnic diversity spanning European/Pākehā, Māori, Pacific Peoples, Asian, and MELAA (Middle Eastern, Latin American,

and African) identities.[1] This diverse population provides an interesting context in which to study how social media may facilitate connectedness across various communities.

Further, Aotearoa NZ notably has a rapidly increasing rate of social media use amongst residents. 92.8% of the nation's population aged 18 and above actively uses social media accessed through their smartphones while an estimated 40.8% of adult Kiwis use TikTok (Kemp 2023). Of these users, around 30% of Aotearoa NZ's TikTok audience only uses TikTok and no other social media (Moyle 2022). New Zealand TikTok is especially unique for its celebration of Māori cultural and educational videos that have been specifically highlighted by the platform in a dedicated "Māori Hub" for related hashtags and content creators during Te Wiki o te Reo Māori Week 2021 (Newsroom 2021). The rapid growth of social media use in conjunction with popular dissemination of cultural knowledge creates an interesting cultural context in which to explore variation across motivations for and types of use that may impact physiological responses and perceptions of social and cultural connectedness in Aucklanders.

Study Design and Procedures

Participants engaged in an on-average 50-minute data collection session (Figure 2.1). After receiving informed consent, participants were outfitted with the Polar H10 chest strap and Polar V2 watch to record heart rate variability (HRV). The sensors were activated to record HRV data for four 5-minute intervals, consistent with previous HRV reactivity research (i.e., Hill et al. 2017). Participants first completed a 39-item questionnaire hosted on Qualtrics in which they provided demographic information, basic health information, and information about their social

[1] Aotearoa NZ utilizes language regarding ethnic identity rather than racial terminology, defining ethnicity as, "Ethnicity is the ethnic group or groups that people identify with or feel they belong to" (Allan 2001).

media use. Baseline HRV was measured for at least 5 minutes as they completed said questionnaire.

Short-term physiological responses to the "curated" content participants typically consume were collected as they viewed their TikTok "For You Page" for a 5-minute interval. Participants then sat at ease for a 5-minute recovery before engaging in a second 5-minute viewing session. Two active viewing sessions of 5 minutes were chosen to reflect the average TikTok viewing session of 10.85 minutes (Aslam 2022).

Importantly, each participant's "For You Page" is specifically curated to their preferences by TikTok's algorithm. The algorithm tracks users' interactions with videos on their "For You Page" including likes, comments, and replays to find similar content to recommend (Simpson et al. 2022). To test whether there is a difference between the physiological responses to curated versus non-curated content, this study designed an experiment that utilized a control group and a treatment group during the second viewing session. The control was the participants who watched their own "For You Page" twice; the treatment group was the participants who watched their own "For You Page" during the first viewing session and a dummy account's "For You Page" during the second viewing session.

A total of 4 dummy accounts were created for and used by the treatment group. This limited number of dummy accounts was due to a restriction on the number of associated accounts one may create on TikTok with a given phone number and email. As such, new "non-curated" accounts were created for every 8 experimental group participants. To ensure a randomized selection of videos, each account's cache was cleared and logged out following each participant session until it was permanently deleted after the 8th trial.

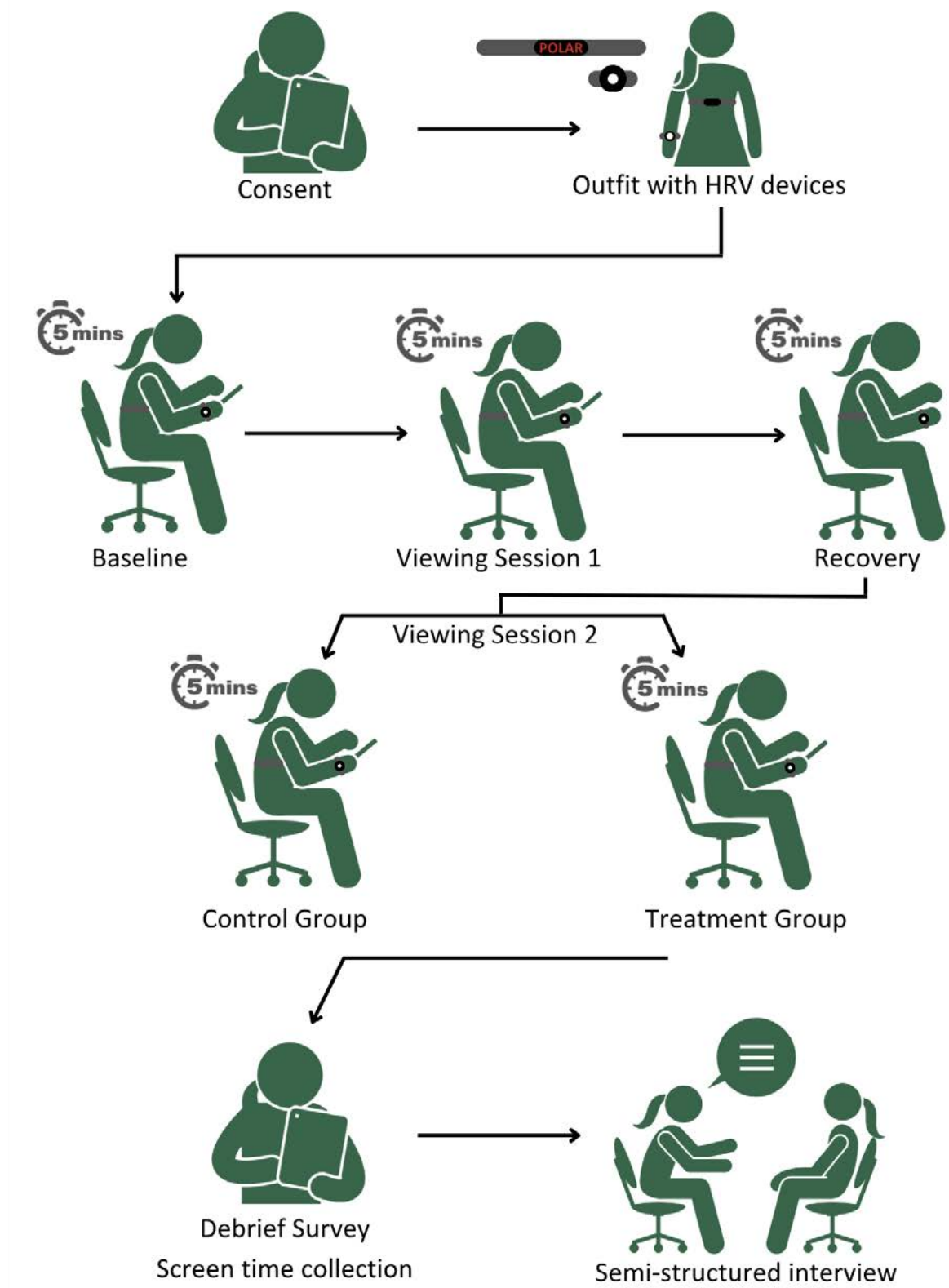

Figure 2.1 Workflow of data collection session. Participants completed the demographic survey during the baseline. All participants watched their own TikTok account's "For You Page" during the first viewing session. Participants were selected at random to either watched their own curated "For You Page" again (control group) or to watch a random, non-curated "For You Page" (treatment group) during the second viewing session.

Once the viewing sessions had concluded, HRV sensors were deactivated. Participants then completed the "Viewing Responses" questionnaire which gathered information indicating participants' perceived affective responses (e.g., feelings of stress, overall positive or negative feelings of viewing) to both 5-minute viewings. The session concluded with the collection of phone and TikTok screen time over the last two weeks and semi-structured interviews. Participants were compensated for their time with a $50 NZD Prezzy gift card.

Questionnaires

Participants completed a total of two questionnaires. The first questionnaire gathered demographic information, basic health information, and information about social media use. Demographic information included age, sex, gender, ethnicity, and subjective social status. Basic health information included height, weight, pre-existing conditions, smoking and/or vaping habits, the PHQ-9 screener for depression symptoms, and the GAD-7 screener for anxiety symptoms. The last section asked about which social media platforms participants use, frequency of use, general motivations for use, use behaviors, and content type. The full questionnaire can be found in the appendix.

The second questionnaire gathered information indicating participants' responses to the TikTok viewing sessions. Participants were shown the same set of 11 questions two times (one for each viewing session) after concluding all treatment periods. Questions asked about how representative the videos watched were of a given participant's typical viewing session, affective responses to the videos shown (e.g., general feelings, stress, positive/negative emotional responses), and viewing behavior (e.g., skipping videos and why). Participants were then asked to elaborate on their selected answers. The full questionnaire can also be found in the appendix.

Screen Time Collection

Phone and TikTok screen time were collected from each participant at the end of their session. Screen time is a built-in feature providing daily and weekly information on the total time spent on the phone and on specific apps. The screen time interface is typically found in settings across smartphone models (Figure 2.2). The majority of participants had this feature automatically enabled on their smartphones and I was able to collect usable screen time data from the majority of the sample (N=57). However, three participants had no screen time data available and were excluded from analyses utilizing screen time as a variable. In the instances when no TikTok screen time was available in the smartphone's general screen time data, TikTok screen time was collected directly from the app which has its own screen time function available.

To collect the data, participants opened their smartphones to the screen time interface such that I was able to record the overall screen time for the available time frame (i.e., screentime for the past two weeks), the general screentime for each available day (i.e., screen time from Monday, Tuesday, etc.), the overall TikTok screen time, and the general TikTok screen time for each available day. These data were later used to calculate the average weekly screen time for phone and TikTok use in minutes.

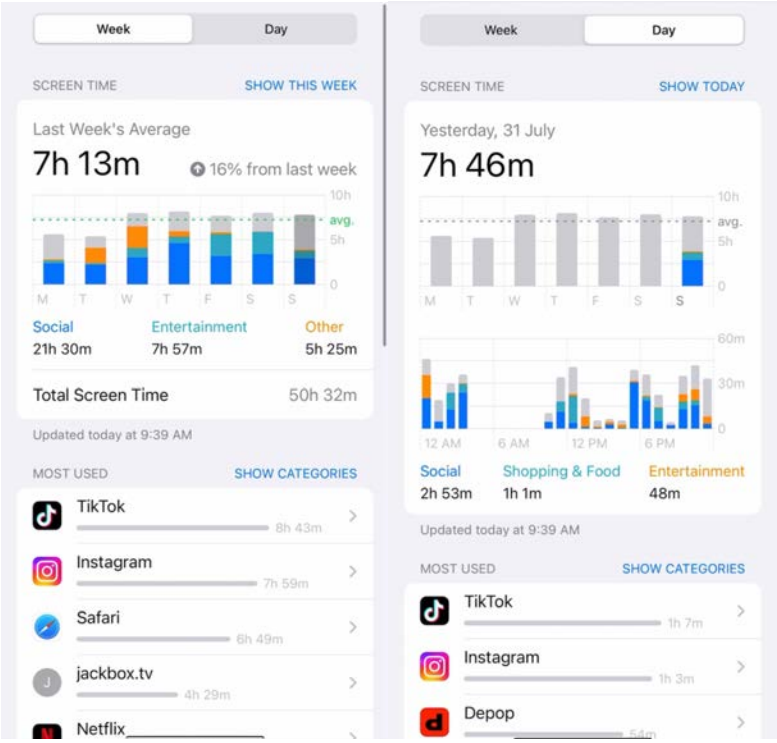

Figure 2.2 Example of a participant's screen time interface on iPhone. The image on the left shows the weekly data summary and the image on the right shows the available data provided per day. You can see app-specific data below the summary at the top of the screen, including this participant's TikTok use.

Participant demographics

Sample demographics can be found in Table 1. A detailed description of these variables is included below.

Age: The sample included 60 young adults aged 18 to 24 years. Young adults within this range were the preferred sample because this age demographic is most likely to use TikTok.

Due to the increasing ease of access to these technologies, smartphones and social media platforms are instrumental to how this specific demographic lives, communicates, and interacts in social groups (Miller et al. 2016). The reasoning behind this is best understood when considering the advent of and subsequent rapid growth of said technologies in the early 2000s. For example, an 18-year-old participant studied in 2022 was likely born in either 2004 or 2005. This is only two to three years before the release of the first Apple iPhone in 2007 which is largely considered the first fully realized smartphone. On the opposite end of the age range, a 24-

year-old participant would have been approximately eight years old when the iPhone was released. The ensuing popularity of the modern smartphone led to the development of component applications including the first app-based social media platforms like Instagram (2010). As such, many current young adults have likely been exposed to online communities for the vast majority of their lives beginning in early adolescence (Miller et al. 2016).

This age range is also preferred to minimize age as a potential confounding variable in heart rate variability (HRV) analysis. Previous studies have found that HRV decreases consistently as age increases (Reardon and Malik 1996; Zhang 2007). Notably, the studies demonstrate that with increased age, parasympathetic activity declined in conjunction with reduced responsiveness to external stimuli. As one of the aims of this thesis is to understand physiological responses to external stimuli as quantified through HRV data, minimizing potential confounding variables is necessary.

Sex and Gender: Although the sample consists of thirty-seven female and twenty-three male participants, thirty-five identify as cisgender women, twenty-three identify as cisgender men, and two identify as non-binary/genderqueer and transgender.

The inclusion of gender non-conforming groups is an important aspect of this research as it relates to study aim 1 which explores how motivations for TikTok use impact the participants' sense of social and cultural connectedness on and offline. As later discussed in Chapter 4, queer participants expressed how these identities are a factor in TikTok's positive and negative impacts on them as it relates to sentiments of relatability, connectedness, and well-being.

Ethnicity: Participants self-identified with five ethnic groups including European/Pākehā (N=31), Asian (N=26), Māori (N=5), Pacific Peoples (N=5), and African (N=1). Twelve participants self-reported two or more ethnic identities.

Occupation: Fifty-two participants were full-time university students, five were part-time university students, two were employed full-time, and one was employed part-time.

Subjective Social Status: The study used the MacArthur Scale of Subjective Social Status youth version (Goodman et al. 2001). The visual scale shows a picture of a 10-rung ladder and asks participants to rank their own perception of their family's socioeconomic status without the numerical values of income. The lowest rung (1) represents the lowest standing while the highest rung (10) represents the highest standing. Full-time and part-time students were also prompted to rank their own perception of their social standing within their school using the same 10-rung ladder.

Depression Score: Depression symptoms were screened using the PHQ-9 screener (Kroenke et al. 2001). The PHQ-9 is a self-reported 9-question instrument based on individual experiences from the previous seven days. One question pertaining to self-harm was removed per ethical review request. The screener is a relatively short and validated assessment of depression and is commonly used across research to measure the severity of depression. The responses are scored and summed. The PHQ-9 score (not including the removed question) ranges from 0 (minimum, minimal depression) to 24 (maximum, severe depression).

Anxiety Score: Anxiety symptoms were screened using the GAD-7 screener (Spitzer et al. 2006). The GAD-7 is a self-reported 7-question instrument based on individual experiences from the previous seven days. It is also a relatively short and validated assessment of anxiety and is commonly used across research to measure the severity of anxiety. The responses are scored and summed. The GAD-7 score ranges from 0 (minimum, minimal anxiety) to 21 (maximum, severe anxiety).

Pre-existing health conditions: Participants were asked to report any pre-existing heart, lung, or mental health conditions (yes/no). If yes, participants were asked to report if they took any medication for said condition (yes/no).

Smoking and/or vaping habits: Participants were asked whether they currently smoked and/or vaped tobacco and nicotine products (yes/sometimes/no).

	Total sample (N = 60)
Age (years)	20.2 (1.56)
Ethnicity (adds up to over 100%) European/Pākehā Māori Asian Pacific Peoples African Mixed race/ethnicity	 31 (51.67%) 5 (8.33%) 26 (43.33%) 5 (8.33%) 1 (1.67%) 12 (20%)
Occupation Full-time university student Part-time university student Full-time employed, not in university Part-time employed, not in university	 52 (86.67%) 5 (8.33%) 2 (3.33%) 1 (1.67%)
Subjective Social Status (range 1 - 10)	6.8 (1.53)
GAD-7 (range 0 - 21)	6.78 (5.17)
PHQ-9 (range 0 - 24)	7.62 (5.74)
Diagnosed heart conditions	1 (1.67%)
Diagnosed lung conditions	7 (11.67%)
Diagnosed mental health conditions	8 (13.33%)
Tobacco use Yes No	 15 (25.00%) 45 (75.00%)
Average weekly phone screen time (minutes)[1]	315.38 (113.74)
Baseline HF-HRV (power in ms^2)	5.70 (1.22)
Reactivity HF-HRV (power in ms^2; first session)	6.04 (1.32)

Table 1 Descriptive statistics of study sample (N = 60).. Sample means (with standard deviation and range) or frequency (percent) of model variables. [1]Only 57 participants had data on screen time for the past two weeks.

Heart Rate Variability: Data Collection and Analysis

This study utilizes heart rate variability (HRV) as an index of the autonomic nervous system (ANS) functioning in relation to phone and TikTok use. The ANS has two branches, the parasympathetic system, which regulates "rest and digest" functions, and the sympathetic system, which regulates the "flight or fight" response (Kemp and Quintana 2013). Importantly, HRV is a non-invasive measure of ANS activity that reflects beat-by-beat changes in heart rate that indexes neurocardiac function (Bernston et al. 1997; Kemp and Quintana 2013; Shaffer and Ginsberg 2017). HRV is sensitive to stress such that lower HRV indicates sympathetic dominance and higher physiological stress while higher HRV indicates parasympathetic dominance and lower physiological stress (Figure 2.3; Hourani et al. 2020).

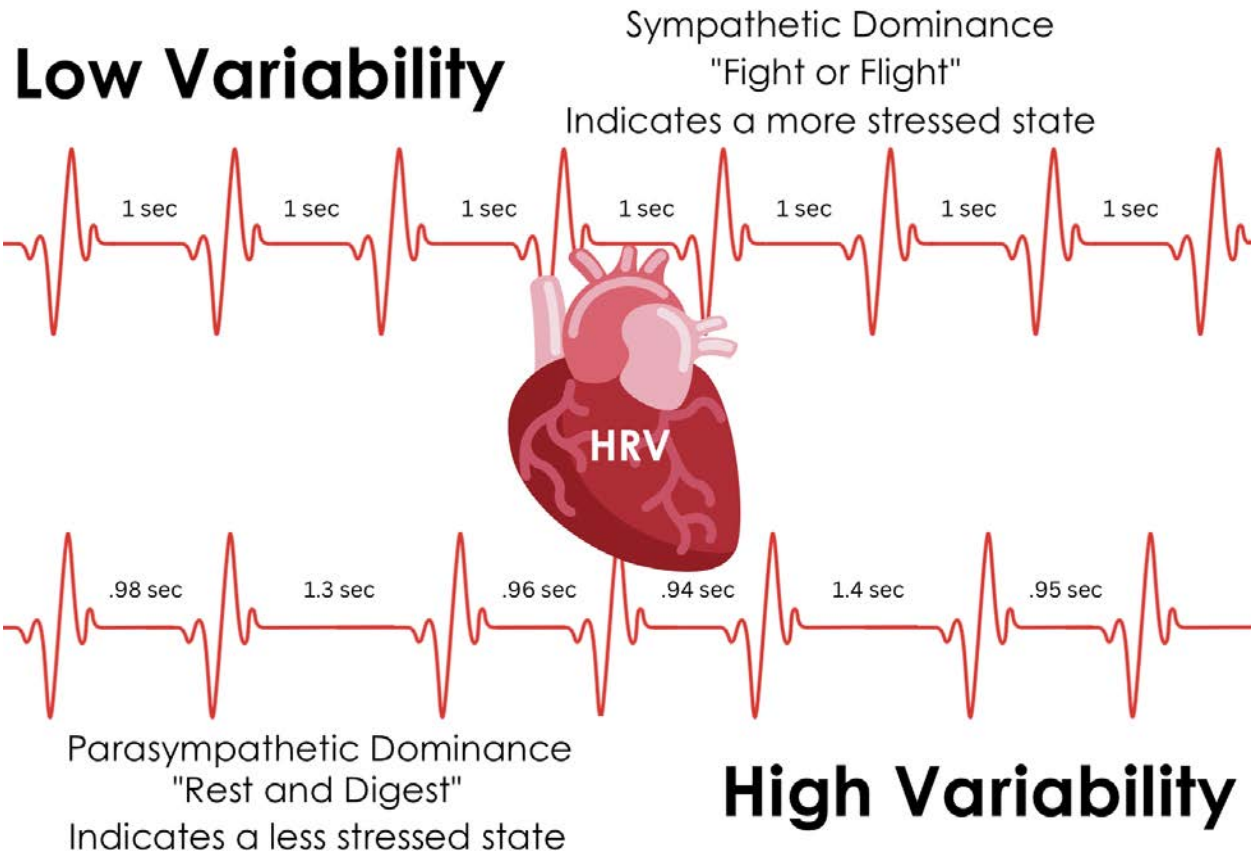

Figure 2.3 Visual depiction of the differences between lower heart rate variability and higher heart rate variability.

Short-term HRV measurements (~5 minutes) are the preferred length interval when indexing ANS functioning. This is primarily due to the fact that one of the main processes generating short-term HRV measurements is the relationship between the aforementioned sympathetic and parasympathetic branches of the ANS (Shaffer and Ginsberg 2017). Five-minute intervals are commonly used across other HRV studies looking specifically at short-term HRV responses to stimuli (Hill et al. 2018; Heathers 2014).

All participants were outfitted with the same HRV devices during their individual sessions. The Polar H10 chest strap and Polar Vantage V2 watch were chosen as the measurement devices for this study due to their prior validation as suitable sensors for HRV research (Schaffarczyk et al. 2022). The H10 chest strap is currently the most accurate wearable HRV device on the market and functions as the sensor in this study (Hinde et al. 2021). It was snuggly worn directly on the skin just below the sternum. However, to extract the raw R-R data from the sensor to analyze with external software (Kubios HRV Premium 3.5.0) the H10 chest strap was paired with the V2 watch. The V2 watch was worn on either wrist per the participant's comfort (Figure 2.4).

Figure 2.4 Example of HRV sensor placement.

Raw data were exported from the Polar devices onto the primary researcher's secure computer and uploaded to the Kubios HRV Premium 3.5.0 software following the completion of each day's sessions. Kubios HRV is a scientifically validated software for HRV analysis (Tarvainen et al. 2014). The software has the ability to select multiple short samples (e.g., 5 minutes) to be analyzed within the longer sample across various analytical parameters including time-domain, frequency-domain, and non-linear HRV parameters. The software also automatically preprocesses raw R-R data for noise detection, beat and artifact correction, and detrending. Detected noise or periods when the data is corrupted is excluded from the analysis to improve reliability. Beat and artifact correction identify and correct all abnormal beat intervals prior to analysis (Lipponen and Tarvainen 2019). Detrending removes very low-frequency trend components to ensure short-term HRV analysis is more sensitive to variability in low and high frequencies as regulated by the ANS (Task Force 1996; Berntson et al. 1997).

This analysis focused on frequency-domain results as transformed by FFT-based Welch's periodogram on Kubios. The FFT spectrum is obtained as the HRV sample is divided into multiple overlapping segments of which the spectra are averaged. This is similar to light being refracted into component wavelengths by a prism. The resultant spectrum consists of generalized frequency bands including very low frequency (0=0.04Hz), low frequency (0.04-0.15Hz), and high frequency (0.15-0.4Hz) bands. Within this framework, the present analysis compares participants' high-frequency HRV (HF-HRV) power values during baseline, recovery, and viewing periods. Importantly, lower HF-HRV power is correlated with stress, panic, and anxiety (Shaffer and Ginsberg 2017).

Semi-structured Interviews

Semi-structured interviews were conducted at the end of each session. Interviews covered an array of topics related to motivations for TikTok use including when and why participants began using the app, whether participants seek out certain types of content, and how these factors impact use behaviors. Particular focus was also given to how TikTok either does or does not foster sentiments of social and cultural connectedness within interpersonal, broader local, and global spheres. In these instances, participants largely spoke about personal experiences but would at times provide anecdotes about friends or their perspective on common behaviors and tendencies across their age group. Additional topics were also addressed as participants mentioned relevant information during interviews such as why a user may eventually choose to delete the app. The order of questions varied per interview following the flow of topics as set by participant responses.

All interviews were audio recorded with given consent and ranged from 5 to 20 minutes. Audio recordings were initially transcribed using the Microsoft Word transcription tool and were checked and corrected by the primary researcher. In accordance with the guarantee of anonymity, all transcripts, notes, and forthcoming representations of participants have been de-identified.

Thematic analysis

Qualitative data were thematically analyzed through a continuous and in-depth familiarity with each interview transcript. Coding and memo-ing of all transcripts were facilitated through the use of ATLAS.ti version 9.1.3. Using this software, the primary researcher engaged in both deductive and inductive coding methods to best identify emergent themes.

Deductive codes were established using key phrases, words, and ideas from the list of potential interview questions. Codes in this category cover topics including why participants started using TikTok, whether they had preferences for New Zealand-based or international content, and sentiments of social connectedness among others. These codes cover general topics and were iterated into more specific groups through the inductive coding approach. Inductive codes were created based on arising themes identified across all interviews. These often broke deductive codes down into more specific categories. For example, the more general code for connection led to codes about verbal connection, relatability, the strength of friendship relationships, and disconnection. All codes were separated into code groups based on common ideas and themes. Qualitative responses from the aforementioned questionnaires were similarly analyzed.

Positionality

As a young adult and student myself, I acknowledge my positionality in stepping into the role of a researcher and data collector. As participating in any study during which one is being observed may be nerve-wracking, I aimed to make the sessions as comfortable as possible for the participants. Each participant was met at the building's entrance where I introduced myself, my role as a researcher, and explained the purpose of the study. Participants were allowed and encouraged to ask questions about the project and myself which often resulted in visible ease once they realized the current project is equivalent to the honors programs at their universities. Though in some cases the similarities between the participants and myself may have put some participants at ease, it may have potentially caused more anxiety for others. Additionally, as a TikTok user myself, I began the study aware of my own lived experiences using TikTok;

however, was highly cognizant of the fact that my experiences are unique to those of the participants.

Ethical Considerations

This study received approval from the Committee for the Protection of Human Subjects (CPHS), the Institutional Review Board (IRB) at Dartmouth College. All participants provided written, informed consent prior to their participation in the study.

The ethical concerns related to this study were minimal. Participants were asked about their feelings of stress, anxiety, and depression which had the potential to cause mild distress. While acquiring informed consent, it was explained to participants the types of questions to be asked and that they were granted the ability to decline to answer any questions. Additionally, since TikTok videos were not pre-screened before the viewing sessions, the videos could contain a range of content, including potentially stressful or distressing videos. Participants were also made aware of this risk and were allowed to skip past any videos they did not want to watch.

Chapter 3
Unraveling User Motivations:
Exploring the Fascination Behind TikTok

Introduction

TikTok's cultural impact on young adults is undeniable. Much like its social media contemporaries—apps like Facebook, Instagram, and Twitter—TikTok has been able to cement itself as one of the prime social media platforms to be on, now reaching an active user base of over 1.5 billion users globally (Iqbal 2023). As social media has gained an increasing role in daily life, anthropological inquiry initially presumed the motivations for use are directly tied to social networks and connectivity (Wilson and Peterson 2002; Dijck 2013). However, as social media sites evolve and their content diversifies in line with the apps becoming hubs of informational and cultural exchange, the reasons users begin and continue to use them are likely changing too. Recent work in China looking at the motivations behind TikTok use identifies commons themes including using the app for positive social validation, because of its trendiness, and as a form of escapism (Omar and Dequan 2020; Scherr and Wang 2021; Montag et al. 2021). The young adults in this study exemplify some of these motivations among others as they discuss the reasons that continuously draw them to spend time on TikTok. For many of them, their motivations for use are driven by complex interactions between social influence and their personal enjoyment of the array of content types found on TikTok.

The Power of Social Influence: Initial Motivators for TikTok Use

TikTok became especially trendy around the onset of the COVID-19 pandemic in part because of its visually and aurally engaging content. The novelty of this kind of content provided a break from other social media platforms' "repetitive" image and text-based content that had

dominated the social media scene for more than a decade. This is not to say that short-form videos did not already exist; in actuality, TikTok stepped in to fill the niche left behind by its failed predecessors. While scholars attempt to understand the appeal of continued TikTok use through the application of theories like uses and gratification (Whiting and Williams 2013; Omar and Dequan 2020; Scherr and Wang 2021), they often overlook the importance of what drives users to get on the app in the first place. For many participants, regardless of whether they began using the app in 2019 or 2022, the pivotal forces of social influence, curiosity, and boredom played parallel roles in enticing them to download TikTok.

TikTok gained traction among young adults because of the power of social influence. It only took seeing the people around you download the app, share videos, and make references to its content to establish TikTok as relevant and necessary to remain socially conversant with peers and friends. As more and more young adults began using the app, the more others felt it necessary to join as well. One participant explains how this influence affected her in early 2020, saying, "I started using [TikTok] because of my friends. Then it coincided with lockdown and being another social media to use when I was bored. But the main reason is definitely because I saw other people using it." For participants like this one who began using the app during the pandemic, engaging with this platform-specific content was like gaining access to a new mode of connection. Even as lockdowns ended, TikTok's prevalence in young adult spheres remained such that knowledge of its trends and memes still held a notable place in being able to connect and communicate with other young adults. As references to TikTok moved into offline conversations, participants who had not downloaded the app during lockdowns began to feel a renewed sense of social influence. Another participant explains,

> All of my friends had it, and pretty much everyone I knew had it. And they were like, 'Oh, I saw this thing on TikTok, and I want to send it to you, but you don't have TikTok.' And I kept on refusing to get it. Then I'm pretty sure at the start of this year [2022] since it was summer, I was like, I'm going to get it because I feel like I'm missing out.

In refusing to download TikTok for an extended period of time, this participant put himself at an apparent social disadvantage among his friends. The participant's status as a member of the "out-group" or non-TikTok-using group was constantly reiterated through explicit reminders that he could not engage in conversations about certain topics.

As alluded to in the quote's last sentence, the frequency of exclusionary occurrences and remarks amassed into sentiments of fear of missing out or FOMO. FOMO is rooted in the anxiety that others may be experiencing something rewarding that one personally is not, resulting in "a desire to stay continually connected with what others are doing" (Przybylski et al. 2013). The solution to rectify the above participant's "out-group" status and FOMO is implied through his friends' rhetoric; downloading TikTok would enable him to engage in "in-group" conversations with them.

Importantly, social influence can also extend beyond the boundaries of friendship. Not having TikTok intensified feelings of alienation among a couple of the participants who expressed that they had a lack of friends in addition to not knowing how they are "supposed" to interact with other members of their age group. One participant exemplifies this as she says,

> I felt like I was really out of touch with my peers. They're all going on about, 'Oh, this TikTok dance or this song or this audio.' And I'm like, what are you on about? I don't know. I use other social media, but I specifically avoided TikTok because, frankly, it's kind of addictive. But I finally decided alright fine because I feel like it helps you connect with your peers better…*You'll know what they're talking about.* So that was the only reason I downloaded that. And it kind of helped a little bit, but not really. It's mostly just a distractor.

The increasing utilization of TikTok to establish commonality in offline and online social spheres exasperated this participant's sentiments of FOMO and disconnection. She in part

blamed her inability to connect with her peers on not being able to reciprocate TikTok-based referential knowledge during conversations. The negative emotions she associated with not having TikTok perpetuated the idea that using the app is essential to engaging with one's peers. In the case of the quoted participant, and likely others, the seemingly evident advantages of using TikTok outweigh the disadvantages. As such, some young adults are willing to risk falling into "addictive" or problematic use tendencies with TikTok purely to fulfill the desire to be socially connected with their peers.

Through the effect of social influence on these participants, we are able to identify being socially conversant as a key motivator for new young adult users. Being socially conversant is not necessarily interchangeable with the idea of social connection but instead offers a more nuanced perspective of TikTok's role in young adult social spheres. Although the participants downloaded TikTok with the intention of alleviating FOMO, they are not doing so by interacting with their friends and peers directly on the app as they would on other apps like Instagram or Facebook where they would see posts from members of their social networks. Instead, young adult users build their referential knowledge by viewing content that may later facilitate conversations with their peers.

While social influence played a prominent role in getting many participants on the app, there are also those who specifically sought out TikTok because of boredom. For this subset of participants, TikTok primarily serves to fill free time and provide entertainment. Interestingly, drawing on patterns perceived through the qualitative data, use behaviors vary widely amongst this group. For instance, some feel less attached to the app, use it less frequently, and have even deleted and redownloaded the app multiple times while others are frequent and consistent daily

users. These differences may be attributed to the lesser role of social influence which affords some participants more mindful autonomy over their use behaviors.

Finding My Own Space: Exploring the Importance of User-Platform Intimacy

While participants recalled what drove them first to download TikTok, they also offered explanations for what currently motivates them to use the app. Despite the aforementioned prevalence of social influence from friends and peers, it seems that participants actually use the app more passively, often just watching content of interest rather than interacting with others on the app. By centering their own interests in the TikTok watching experience, many participants undergo a change in what motivates them to use the app. As such, the longer a participant has been using TikTok, the more their motivations began to shift in this direction. In such instances, the social aspect of TikTok or being socially conversant becomes subsidiary to the individual's interaction with the app.

Although the app is widely considered a social media platform, its primary function is not to make users feel more connected to their social networks through online interaction. Instead, TikTok's curative algorithm takes user behaviors—liking, commenting, replaying, sending, and saving videos—to create the aptly named user-specific "For You Pages" that pander to a range of users' interests. The algorithm works best for regular users of the app who provide more content preference data. This leads to a positive feedback cycle such that the more curated content a viewer sees, the more likely they are to return to the app. Previous scholarship finds that users with a basic understanding of how the algorithm works see it as a manipulatable tool that can foster a sense of "intimacy" between themselves and the content shown on their "For You Pages" (Şot 2022). As such, TikTok leverages the curative algorithm to keep users on the app for

as long as possible in any given viewing session. One participant notes the way in which the personalized feed discourages using TikTok for direct social connectivity by saying,

> My sister was on [TikTok] so much and I would just share the account with her, and I thought I needed my own 'For You Page' to have my own stream of content that is more personal to me…Now I try not to add my friends on TikTok just so I have that space in between Instagram and TikTok so it's like having my *own* space. I mean, I already see all their posts on Instagram. On TikTok, I just try to keep it to what I find is really interesting outside of my other social life.

What makes this response so interesting is not only that it is a shared sentiment—other participants explicitly mention not wanting to see content made by people they know let alone follow said people—but also because it demands we evaluate the discrepancy between our expectations of social media and how TikTok deviates from that. If up until this point social media was designed to take offline social networks and connect them online, TikTok undoes this by relieving users of the pressure to interact with their networks virtually.

The use of TikTok as a private space may seem to contradict its prevalence in young adult social culture; however, these pockets of personalized content are subsections within the larger social media landscape. No one TikTok user is ever seeing utterly unique content but is instead watching the same videos as thousands if not millions of other users with similar preferences. As such, TikTok introduced a loophole of sorts when it dismantled the traditional expectation of self-generated posting that is at the core of platforms like Instagram and Facebook. Because of this, TikTokers can adhere to the pervasive nature of social digital pressure—the expectation to function digitally—by being passively active on social media through content consumption (Büchi et al. 2019).

Passivity in this sense is what makes TikTok so appealing to some of its users. When considering social digital pressure we know it is connected with additional anxieties including concern about social standing, perception, and even FOMO (Lenhart et al. 2015; Ross 2019).

Since TikTok is rooted in the average user *not* posting content, it enables those young adults who feel compelled to "stay in the loop" to do so while removing the additional pressure associated with posting content. This is clearly reflected across the study sample of which only one participant said that they regularly create and post videos on the app while the majority (61.67%) stated they had never posted a video (Figure 3.1). Users can thus be stratified along the line of "creator" and, more commonly, "lurker."

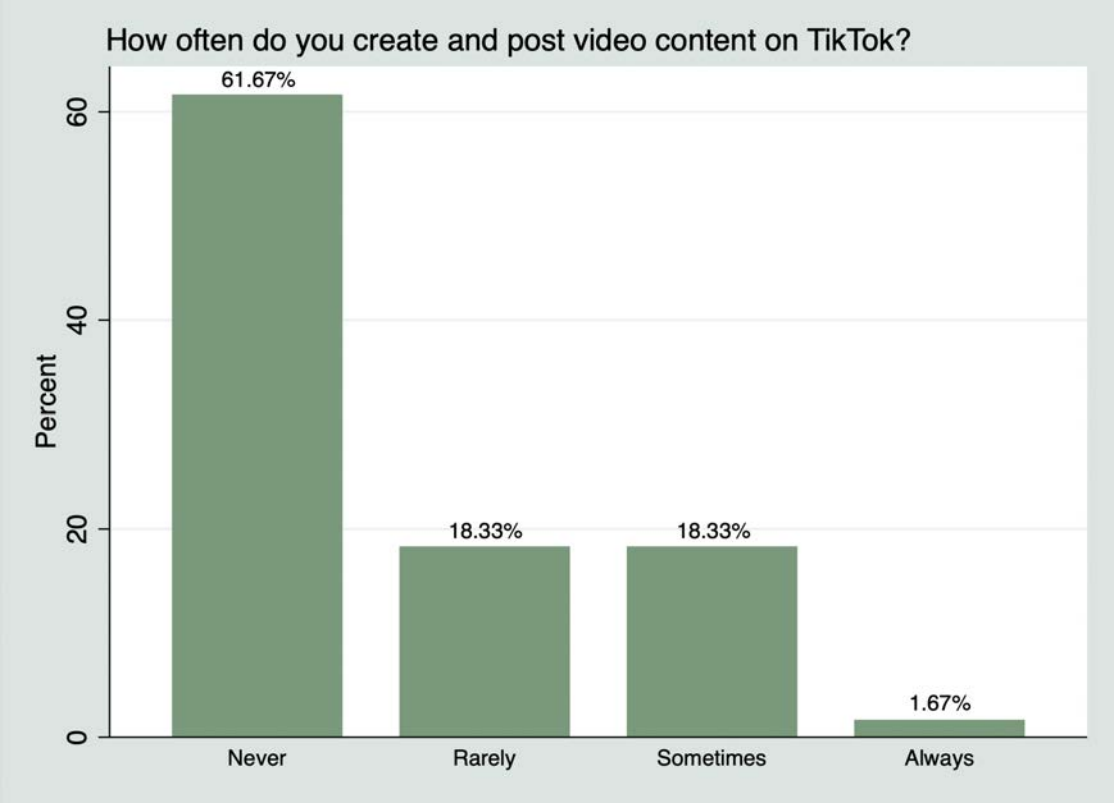

Figure 3.1 Distribution of how often participants create and post videos on TikTok. The percentage of each response type is shown above the corresponding bar.

It is in TikTok's ability to repackage the popular and widely consumed into something deemed as "personal" that we can consider user-platform intimacy to be a motivator for use among "lurkers." This intimacy does not align with what anthropologists may expect in that, for these users, cultivating a space predominately free from family, friends, and peers is paramount to establishing a bond between themselves and their "For You Page." By removing the direct

presence of members of their social network, the “For You Page” content becomes essential to the TikTok experience. As one participant states,

> I think its algorithm seems to work far better than a lot of other algorithms in terms of finding things that I may have not seen before, but that really hit the spot for me. TikTok has a lot of niche entertainment and humor that a lot of other sites don't have, and I think that's what sort of sets it apart.

Here the algorithm is acknowledged as a key component in the creation of an alternative social media space that effectively intakes user-specific preferences and accordingly outputs content of interest. Similarly, another participant describes this same mechanism as the curation of a “very specific nice little niche” for each user whereupon the delivery of novel media via the “For You Page” reinforces the sense of intimacy between the user and content. To me, each viewing session becomes a mirage: what is presented as a highly personal, even private moment is truly an engrossment with the monotonous divulgence of mass-produced internet content.

The distinctiveness of this user-platform intimacy, resting upon content as its fulcrum, is intrinsic to our understanding of additional motivators. Ultimately, those that most perpetuate continued TikTok use among participants are escapism and novelty (Omar and Dequan 2020; Scherr and Wang 2021). For young adults for whom social media is a deeply integral part of life, escapism is not only a break from the external stressors of life but also a break from other kinds of social media. To be a break, TikTok relies on its unique content. As one participant notes, “I think using TikTok is a better way to spend my time instead of Facebook and Instagram because it has very specifically curated content.” It follows that for users to persistently gravitate toward TikTok as an escape from the other kinds of content that populate the broader social media landscape there must be novelty inasmuch as novelty relates to the constant dissemination of new, topical videos.

Conclusion

Throughout the sample, most participants follow the same general path when it comes to their motivations for TikTok use. In large part, young adults can hardly evade mention of TikTok as the popularity of the app continues to bleed into other social interactions. Participants accordingly feel like consuming TikTok content is necessary to be a part of the "in-group" among their peers and friends that refer to the app's trends and jokes in conversation. The desire to be socially conversant and avoid FOMO can be so potent that the participants who were first driven to join TikTok because of this social influence commonly choose to continue using the app even when it interferes with other aspects of their lives by being a distraction. While this social influence does not account for why all participants began using TikTok—there is a handful who started using the app out of boredom—the vast majority of participants continue using the app because of the unique curated content the platform offers. Interestingly, participants gain a sense of intimacy with their "For You Page" as TikTok's algorithm promises a constant stream of new, topical videos. Because this curative feature is specific to the app, participants experience a sense of escapism from their online and offline lives whereby they retain the feeling of connection by being "plugged in" but avoid seeing content created by people they personally know.

Chapter 4
TikTok's Social Fabric: The Dynamics of Social and Cultural Connectedness on TikTok

Introduction

For young adults, social media has changed sociality and with it how friendships and community ties are formed and sustained. TikTok plays a large role in this as it bridges the offline and online with each other. To do so, it shows young adults content that may resonate with them either through affinity or interest, which they are then inclined to share with others. The appeal of consuming and sharing this content has resulted in a growing dependence on TikTok for connectivity among some young adults. As such, this chapter discusses the ways TikTok affects young adults' perceptions of social connectedness to friends and communities (e.g., global, affinity, culturally-specific) at large. Across the sample, participant perceptions of connectedness varied widely; some perceived substantial benefits that enhanced overall sentiments of social and cultural connectedness across their interpersonal relationships and community affiliations while others described feeling more disconnected from those around them. While the majority of participants emphasized the positive aspects of TikTok-based connections, others wondered whether constantly engaging with the app led to disengagement in offline spaces.

Exchanging TikToks: The Impact of TikTok on Building and Strengthening Friendships

For many of my participants, TikTok is regarded as a welcome but non-essential supplement to their established friendships. This is likely because the ubiquity of social media has impacted how young adults interact with their offline and online relationships. However, there is rising anxiety among older generations and scholars that increased online interactions

and relationships are replacing their offline counterparts (Chambers 2013; Twenge 2013; Ling and Campbell 2011). While it seems that for most social media users the digital is not a replacement for the offline, it can lead to feelings of disconnection for others, as will be discussed later in this chapter. In considering the benefits of social media use, a group of anthropologists asserts that the offline and online are not in opposition to each other; rather, "relationships as created, developed, and sustained through integrated online and offline interaction" (Miller et al. 2016: 100). Understandably, it follows that young adult sociality to an extent migrated to the digital sphere as younger generations have grown up surrounded by the constant innovation and dissemination of digitally mediated ways of life. As such, rather than upholding a false dichotomy that pits online and offline interactions against each other, we can instead understand them as facets that make up relationships, especially for young adults who have grown up alongside social media.

TikTok facilitates both online and offline communication by giving friends additional talking points rooted in the shared experience that is using the app. Accordingly, we are reminded of the previously discussed idea that young adults strive to be socially conversant. This quality takes on a more fundamental role in the interactions between close friends in which commonality acts as a cornerstone for these more substantial social connections. One participant articulates this by saying, "A lot of friendships rely on your ability to find points in common, for one, but also your ability to relate to each other or find the same things funny." TikTok provides participants with a centralized platform in which easily and consistently accessing content crafts instances of similarity when friends consume the same or similar content. Another participant highlights this as he explains, "[When you have] TikTok amongst friends, you can all relate to it. And it's not that I wouldn't have a friend if they didn't use TikTok or anything, but, you know, I

can definitely talk about the things I see with my friends." This quote underscores how digital happenings bleed into and even bolster offline interactions rather than displacing them.

Despite providing additional points of commonality for pre-existing friendships, TikTok mostly does not fundamentally change the relationship or affect how participants interact with their friends. Instead, as one participant describes,

> It brings a different dimension [to friendships] but it doesn't necessarily make us closer friends or, I guess, friends on a deeper level. It sort of just provides a different dimension where we can communicate in another sense through videos that we're not involved with but that we can understand because they're talking about a shared experience we've had or talking about a joke that we experienced.

This "different dimension" is tied to how and what participants are communicating with their friends. On one hand, certain TikToks enable friends to collectively reminisce on past experiences by discussing the content of the videos themselves. On the other hand, participants and their friends are communicating *through* the videos. This is similarly expressed by a different participant who explains that "there's a lot of things [on TikTok] that you see that relate to the both of you, so rather than saying what's in the video—because it [the content] might be kind of weird—you can send it and still connect in that way." The affinity among participants to share videos in place of saying what is in the video in their own words may be a digital means of fostering interpersonal intimacy between friends. Typically, it appears that close friends engage in more intimate electronic exchanges over social media with each other thus maintaining the strength of these relationships (Hsu et al. 2011). Importantly, intimacy is defined as sharing something that is private and personal (Lomanowska and Guitton 2016). Under this framework, sharing one's thoughts or humor through the medium of "weird" videos may be a kind of self-disclosure that facilitates bonding if or when that content is well-received by the recipient friend. As such, TikTok has the capacity to sustain friendships as it embodies the voice of the sender.

TikTok is also used in this way to sustain long-distance friendships in which connecting in person is a rare occurrence. While TikTok is relatively novel, opting to use digital forms of communication to maintain long-distance relationships is not; previous research highlights that connecting digitally can augment senses of belonging, perceived proximity, and shared space and time (Lomonowska and Guitton 2016; Bacigalupe and Lambe 2011; Madianou and Miller 2012; Vetere et al. 2005; Wilding 2006). These sentiments can be of particular importance in young adult friendships that rely on social media to host communication. This is well described as one participant says, "I have one friend who lives in Australia, and I never see her, but we always send each other videos and bond over that. We talk through DMs [direct messages] as well, but TikTok is an easy way to reach out." Because this participant and her friend already are individually spending time on TikTok, sending each other videos on the app becomes an easier way of staying in touch than texting. In other words, their communication over TikTok may be more reliable because they are both potentially spending more time on TikTok than they are on other digital platforms.

Another way to interpret this preference for TikTok relates more directly to the ideas of perceived proximity and shared space and time. As young adults send each other videos throughout the day, they reaffirm their bond with their friends by indicating that they are regularly thinking about each other. As a different participant puts it, "I think for long-distance friends it keeps us connected and sort of reminiscing on the things that we did together or things we might do together. I have one friend that sends me lots of videos of places you can go and so we're like, oh, we could do that. I think it keeps us connected." By collectively reminiscing over shared memories and envisioning the creation of future ones, this participant and her friends

bridge the gap in their separation. In moments like these, their closeness is reiterated as they are able to acknowledge that they value the opportunity to eventually interact in person again.

In this same vein, TikTok can also strengthen and even catalyze the formation of new friendships. For example, the app's propagation of content was integral to the development of one participant's friendships. Despite initially meeting offline, sharing TikToks with each other was a necessary step that led to an overall closer relationship between the participant and her friend. She explains, "One of the ways—on a very local and interpersonal level—I got close to one of my friends [was] because we would just send each other TikToks all the time." In sending each other videos, they were able to learn about their shared interests and preferences relatively quickly as they interacted outside of the bounds of physically being together in person. The need for online interactions may have been necessitated by the COVID-19 pandemic and Aotearoa's strict lockdown restrictions. From March 2020 through the end of 2021, Auckland underwent four lockdowns which severely limited residents' ability to interact with others in person. These restrictions led to what one participant described as "extremely isolating" conditions where they could only interact with friends digitally. During these moments, TikTok offered users the ability to still form new, meaningful relationships.

While, by and large, participants use additional mechanisms of digital communication beyond TikTok (e.g., texting, calling, and other social media sites), there is a small subset within the sample for whom TikTok has become the main tool for conversation between themselves and their friends. Notably, the conversation never seems to go beyond communicating through the videos or discussing the content of the videos. Essentially, sending TikToks replaces personal conversations with a more of a surface-level interaction. One participant exemplifies this by saying, "Me and my friends, we don't really need to talk much, but we really communicate

through just tagging each other in videos and sharing videos." TikTok's significance in this friendship seems to differ from the supplementary role it plays as a communicative tool for the other participants we have thus far discussed. Here, it appears to result in an overreliance on the platform to completely sustain the friendship. Because texting is interpreted to be a more formal type of communication that must be driven by a reason beyond just checking in, it could be that these participants see communicating via TikTok as a more casual form of staying in touch. As one participant explains,

> I use it quite often to chat with my friends because I won't text my friends out of nowhere and be like, "Hey, how are you going?" I'm not like that, I don't text people unless I have a reason to text them. TikTok is an easy way to be like, "Hey, I'm still alive. Are you alive?" without actually chatting to them. So I just send them videos and they send them back.

Relying on sending TikToks appears to allow one to put in minimal effort while still maintaining a sense of digital connection with their social network. It is unclear how much, if at all, these online interactions affect the offline interactions between participants and their friends.

Shared Spaces: Finding Community Connection on TikTok

Beyond having a positive effect on many participants' sense of connectedness to friends, TikTok also connects its users to various types of communities. As the app has become a hub of shared spaces, young adults are able to feel better connected to diverse communities as the algorithm pushes content that aligns with their identities, interests, and values. Robert Kraut and Paul Resnick explain the importance of this digital connection, saying, "Online communities serve the same range of purposes that offline groups, networks, and communities serve. They provide their members with opportunities for information sharing and learning, for companionship and social support, and for entertainment" (Kraut and Resnick 2011: 2). Not only

do digital communities increase access to said opportunities, but they also do so by connecting people regardless of where they are in the world. In this way, they can be incredibly validating for individuals who may be searching to virtually augment or fulfill connection to specific communities. Kraut and Resnick touch on this when saying, "The promise of online communities is that they break the barriers of time, space, and scale that limit offline interactions" (Kraut and Resnick 2011: 2). TikTok does just that.

In true TikTok fashion, the app facilitates community building unlike any other social media. Instead of person-to-person interactions, the short-form videos on the app connect individuals through content that can be informative and entertaining, often at the same time. Due to TikTok's appeal to such a variety of users, it houses content that can be affiliated with or targeted at various groups. Because this plethora of information is hosted on a social media site which occupies a space between the private and public, accessing community-specific content may play a role in young adult identity formation (Dijck 2013; Papacharissi 2010). Identity formation is especially ripe among young adults who are navigating a profoundly transitional period in their lives (Philpott 2000). As young adults begin to develop stronger understandings of their identities, they must navigate what constitutes their "private" and "public selves" (Larson 1995) in the digital and real world. Social media can play a significant role in this process by shaping how young adults make sense of and experience the world around them.

An important consequence of the globalization of social media is that young adults are hyper-aware of their place in a vast yet highly connected digital sphere. TikTok truly underscores this because it so frequently shows users content created by people from all parts of the world. As one participant states, "One of the novelties of TikTok is connecting with people internationally." By breaking down the barriers of "time, space, and scale," TikTok can be

considered a large-scale, international community of which all of its users are a part. However, as we recall from the discussion in Chapter 3, most participants are not personally engaging with other users on the app. This use behavior complicates our understanding of connection beyond just interpersonal interactions. In the broadest sense, connection to the international TikTok community is achieved through knowledge of pop culture and trending topics. One participant alludes to this when saying, "I feel more connected to so many different people, which is really nice. And you also feel connected to everyone in the real world because everyone is watching the same TikToks." The sort of connection this participant describes is twofold; she gains a sense of virtual community when using the app in addition to a heightened sense of offline connectivity. In both cases, participants may feel connected within the broader TikTok community because they have a sense of what people around the world may also be enjoying.

Correspondingly, as participants felt connected to others by seeing international content, they also felt represented at the global scale knowing Aotearoa-based content was being shown to non-Kiwis. Recognition of Aotearoa as an actual place rather than Middle Earth seems to alleviate what one participant pessimistically described as a "massive lack of agency" related to disconnection because "New Zealand is kind of in its own corner and [Kiwis] just sit there." A different participant reflected on how the COVID-19 pandemic really helped bridge the gap between Aotearoa and the rest of the world by creating a shared experience. She explains, "I think it's kind of interesting how because of the pandemic I feel like New Zealand is more connected to the rest of the world in a weird sort of way. So we can relate to some of that stuff as well." The global experience of the pandemic created a unifying experience in which young adults from Aotearoa were potentially for the first time actively relating to the lived experiences of their peers in other countries (e.g., national lockdowns). This process was unsurprisingly

expedited alongside TikTok's growth which provided young adults glimpses into the lives of others during those tenuous times. In this sense, we can understand how relatability plays a huge role in understanding connectivity to broader communities.

While relatability is fruitful in establishing a more global connectivity, it is also extremely important as TikTok gets filtered out into more specific communities. These communities are differentiated by shared experiences that are reserved for one reason or another for a specific type of person. For young adults who identify with these groups, seeing this content is rather validating to their experiences as well as informative. As one participant illustrated,

> I would say the only benefit I see from TikTok, aside from it just being really entertaining, is that it's relatable and it makes a lot of people feel seen and understood because it's a platform where people post certain things they wouldn't say out loud. They talk about things like, 'Oh my God, on this stage of my period, this and this happens' and you're like, 'Oh my God, I thought it was just me.' It makes you feel seen. It makes you feel not alone.

Something as simple as someone posting a video about their menstrual cycle can do a lot of productive work that counteracts the taboo of the topic. As Sarah Beach (2017) discusses in her examination of the use of social media to break down taboos surrounding breastfeeding, posting about common female experiences that have been societally deemed inappropriate is necessary for normalizing them. The ensuing discourse both empowers those who relate as well as connects them to others to form a community founded on sharing, learning, and supporting each other.

In this same vein, TikTok also connects young adults to communities centered around marginalized identities. Within these communities, content creators produce videos that tackle a range of topics from the funny to the serious. Although not all videos are hard-hitting exposés, they can be considered equally valuable because they expose young adults to more people who

share similar identities to them both locally and internationally. One participant highlights the importance of this relatability, saying, “I feel like I see a lot of content that I'm interested in, but the videos that connect more with me are people who identify the same way as me, are racially the same as me, or are in New Zealand.” While many participants noted a comradery that forms when they view content made by other Kiwis, there was an overall sentiment that the most meaningful videos were made by those with shared identities beyond just nationality. The vast majority of participants who identified as members of marginalized communities mentioned how they felt generally underrepresented in Aotearoa. This may be because living in Aotearoa can be isolating due to its geographic location and the demographic makeup of the country.

For queer participants, TikTok provides an escape from the heteronormative and dominant spheres they encounter in their day-to-day lives. Although their “For You Pages” are not solely filled with queer-related content, they reported benefitting from the increased visibility of LGBTQ+ creators on the app. Having access to this type of content is essential since queer youth often seek out online resources while navigating their emerging identities (Fox and Ralston 2016). Not only does viewing this kind of content have the same relatable and validating effects as the menstrual cycle example mentioned above but it also helps these young adults navigate their queer identities and their place within these communities. One participant briefly mentions this when saying, “I do feel like I understand my own communities a bit more with TikTok. For example, I'm queer so I see a lot of TikToks on that as well and I feel like someone understands and it's really nice.” LGBTQ+ young adults like this participant find solace in knowing other queer individuals have had similar experiences and are opening a dialogue around the topic. As such, the utilization of TikTok as a platform for queer visibility is a particularly salient source of informal learning. However, queer content extends beyond just being

informative to also inspiring pride. Another participant touched on this as they explain, “I'm very much on the queer side of TikTok. I like seeing queer stuff like queer fashion and just people talking about things that they're passionate about.” In being exposed to a range of content, participants are able to connect to various aspects of queer culture. Because this positive, reaffirming content is rooted in queerness, it has the potential to be very meaningful to young adults as it subverts the stigmatization of these identities.

Seeing other people from non-Pākehā (European-descended) ethnic groups use TikTok as a platform to contribute to the discourse about their identity-related experiences or ethnic identities likewise remedied feelings of isolation associated with living in Aotearoa for non-Pākehā participants. For example, one participant of mixed ethnicity highlighted how TikTok gives her access to vital conversations relating to her ethnic and cultural identity that she has limited access to in Aotearoa. She describes the prevalence of specifically American content in fueling relevant dialogues, saying,

> I feel like *Everything Everywhere All At Once* recently has been a massive thing for Asian creators to talk about. I feel like that's a little bubble that I don't get as much of in my personal life. That migrant experience, representation, and Asian stuff is being talked about in America a lot more than it is in New Zealand.

TikTok, like other social media, opens the door for a myriad of positive discourses surrounding ethnic identity. While *Everything Everywhere All At Once* was an impactful watch for this participant, it became more meaningful as she virtually connected to an international community of Asian migrants that felt equally as passionate about the film’s message as she did. TikTok videos like this one often resonate with participants in such a way that encourages them to critically reflect on their own identities. A different participant also spoke of this when describing a video that left a lasting impression on her:

> One of the TikToks was an African American woman talking about how influencers spaces don't really value women of color and that you shouldn't be worrying about pulling up a chair at the table because why sit at a table where you're not wanted? And that resonated with me even in my white-passing capacity and not as an African American woman.

Despite not sharing exactly parallel identities, seeing another woman of color discuss identity politics in such an accessible format moved this participant to empathetically consider how her own identity has and will continue to impact her lived experiences. This subsequent introspection harkens back to the idea that social media plays a role in identity formation among young adults since online spaces are utilized to mediate "social and informational exchanges about what it means to belong to a racial or ethnic group" (Tynes et al. 2011: 73). Because young adulthood is often marked by increased independence, it may be difficult to grapple with how one's identity as a person of color may lead to negative experiences. However, videos like the ones mentioned above consequently generate a sense of solidarity between participants and others of similar identities.

At the more local level, indigenous participants emphasize the importance of TikTok as both an educational and connective tool for Māori communities. In *Indigenous Peoples Rise Up: The Global Ascendency of Social Media Activism*, Bronwyn Carlson and Jeff Berglund discuss how indigenous populations around the world have become avid social media users explaining that "Platforms such as Facebook, Twitter, YouTube, Vine, Snapchat, Instagram, and TikTok, blogs with social media interfaces, and mobile technology generally, have expanded the nature of Indigenous empowerment, communities, and social movements" (Carlson and Berglund 2021: 2). Employing social media to expressly spread information about cultural awareness and appreciation creates more opportunities for learning and support. Accordingly, TikTok has become an online meeting place for Māori people to connect with one another as well as take

power and ownership over their own cultural representation on the platform. One indigenous participant passionately commented on this, saying,

> There's some really cool *korero* [discussion] happening on Te Reo TikTok or on indigenous TikTok. I really like seeing that because you can't see it in very many other places. That sort of *korero* [discussion] around decolonization or when Indigenous content creators talk about things—there's just not much of a platform for them anywhere else, and [on TikTok] it can get pretty far.

Te Reo videos can achieve extensive reach both within Aotearoa and internationally, effectively bridging great distances to connect Māori and indigenous peoples to their communities. The above participant continues,

> There are things that I don't think I've ever really thought about a lot until I've seen it on TikTok. Or even just keeping up with things like Pūtiki.[2] The main ways to do that are through accounts you could only find if you are in there [on TikTok]. Even talking about constitutional transformation and stuff, I feel like those kinds of content creators can talk more freely on TikTok, or you can find them and kind of be in that space a bit more, especially if you're a young person.

As this participant indicates, Te Reo TikTok breaks down the barriers to cultural knowledge that may be upheld due to a sense of disconnection from in-person communities where additional conversations about Māori identity and politics are fostered. This is especially valuable for young adults who may have more difficulty entering these offline spaces. As such, the online counterparts offer a less intimidating approach to gaining increased knowledge from people they can identify with. This informal learning reinforces sentiments of connectivity among Māori and indigenous participants as they gain foundational knowledge that encourages them to not only form their own opinions but also actively partake in conversations about Māori social issues (Rice et al. 2016). A different Māori participant explicitly notes this when describing how

[2] In mentioning Pūtiki, this participant is referencing the #ProtectPūtiki movement which is a current occupation of the beach at Pūtiki Bay, Waiheke Island by Uri o Ngāti Pāoa [descendants of the Ngāti Pāoa iwi or tribe]. Uri o Ngāti Pāoa are occupying to protect their ancestral moana [ocean], Tikapa Moana, by stopping the proposed 'Kennedy Point Marina.'

TikTok frequently shows her videos made by Māori content creators that teach her about the current state of the Māori sovereignty movement. Having a multifaceted connection to their indigenous identities through cultural exchange, learning, and social support albeit partially hosted online bolstered participants' positive self-conceptualizations of being Māori.

The Illusion of Connection: Discrepancies Between Perceptions and Reality

Although TikTok positively impacted social and cultural connectedness for many participants, for others using social media can be like walking a precariously fine line between social connection and disconnection. Many scholars have therefore begun examining how social media can function both as a facilitator and inhibitor of connection (Miller et al. 2016; Ling and Campbell 2001). Indeed, in interrogating the growing role of mobile communication in relation to connectedness, Ling and Campbell assert that "oftentimes the benefits of 'bringing us together' in one way comes at the expense of 'tearing us apart' in others" (Ling and Campbell 2011: 323). TikTok, when employed as a communicative tool can do varying amounts of harm and good across different relationships. Predictably, this interplay between connection and disconnection arose across the sample. Because TikTok use is highly individualized, interpretations of disconnection were dynamic and influenced by participants' use behaviors as well as personal perspectives on connectivity.

Maclean et al. (2022) provide a useful framework for defining and differentiating social connectedness from disconnectedness. They define social connectedness as a fundamental desire that when fulfilled results in high levels of satisfaction for the engaged individuals (Maclean et al. 2022; Dohyun and Shin 2013; Satici et al. 2016). Social disconnection on the other hand is fraught with negative sentiments related to the unfulfilled desire for companionship and support

(Maclean et al. 2022; Bevinn 2011; Cornwell and Waite 2009). Because there are various influences that can affect individual perceptions in either direction along the continuum, both can fluctuate over time and even co-occur in different spheres of interaction. That is, one may feel substantially connected offline while feeling utterly disconnected online while at another point in time, the inverse may be true.

The amount of time spent on TikTok seems to be correlated with participants' positive or negative perceptions of their connectivity. The convenience of the platform as a mobile app provokes constant use leading some participants to remain incessantly plugged into the digital sphere. This behavior is exacerbated when friends collectively perpetuate the need to always be virtually connected. One participant describes this, saying, "I talk to people more because we're interacting more on TikTok, but I don't actually talk to them more. It's like we're just sending each other videos so I'm always technically interacting with them but we're not actually saying anything." While sharing videos as a form of communication can be a helpful tool in some friendships, this participant suggests that *for her* these online interactions are more superficial. This may be because in designating the exchange of videos as "talking," the participant relinquishes the time in which she could be partaking in generative conversations with friends. Simply put, she believes that sharing videos is not the same as dialogue. By engaging in back-and-forth conversations whether online or off, this participant potentially would feel more connected with friends as they respond to each other in real-time.

This seems to be corroborated by another participant who also talks about how the reliance on exchanging media leads to depersonalized interactions. Interestingly, before coming to this conclusion, he first mentions that sending videos in some ways enhances friendships because of the sense of retaining constant connectivity. However, as he spoke, he seemingly

rethought this assertion, then followed up with, “I guess it’s [sending videos to each other] kind of a form of disconnection because you don't actually talk—it's not personal.” In this case, the participant does not consider communicating through TikTok a genuine connection because it lacks the degree of intimacy that he seeks, essentially leaving his desire for social connectedness unfulfilled. Yet, he is caught in a Catch-22 in which despite not feeling satisfaction through these interactions, not using the app could cause even more feelings of disconnection. As such, it seems that trying to avoid virtual disconnection by using TikTok can result in overcompensating use that perpetuates offline disconnection. A different participant underscores this when asserting that “You think you're being more connected by seeing people’s stuff [on social media], but then you are sitting in your room on your phone viewing it, so you're not actually connected to them at all.” This participant typifies what she and some of the other study participants experience: disconnection masquerading under the illusion of increased connection.

While social media use complicates some participants’ perceptions of disconnection and connection, others blatantly state that using TikTok hinders if not stops offline social connection. In one regard, this is attributed to high screen time limiting young adults’ offline availability for interacting with others. A participant touches on this when saying, “I feel like it does stop social connection a bit because if you’re just constantly scrolling through videos all the time you’re not necessarily catching up with people.” Her statement can be interpreted to mean slightly different things depending on when and where participants are watching TikTok videos. Notably, study participants largely use TikTok in both public and private spaces whether that be at home, school, or other places (Figure 4.1). If first considering TikTok use in private, then the idea of not “catching up with people” relates to the way in which being engrossed in the app inadvertently isolates participants from others. Not only are they physically separated, but they

may also not be using their time online to digitally communicate with friends. Alternately, thinking about app use in public brings to mind a different kind of disconnection as illustrated by a participant who says, "When you're on [TikTok], you're not really talking to people. You're not communicating. And, you know, you get distracted and do not have good conversations with people." TikTok as a distractor effectively disengages the viewer from their physical surroundings. This occurrence is known as "phubbing" in which people being on their phones while in a social context restricts their ability to readily interact with the people around them (Taylor et al. 2021). Phubbing is an increasingly common hindrance to social connectedness such that the prevalence of social media and its false promise of constant connectivity detracts from the ability to be present in in-person opportunities of connection.

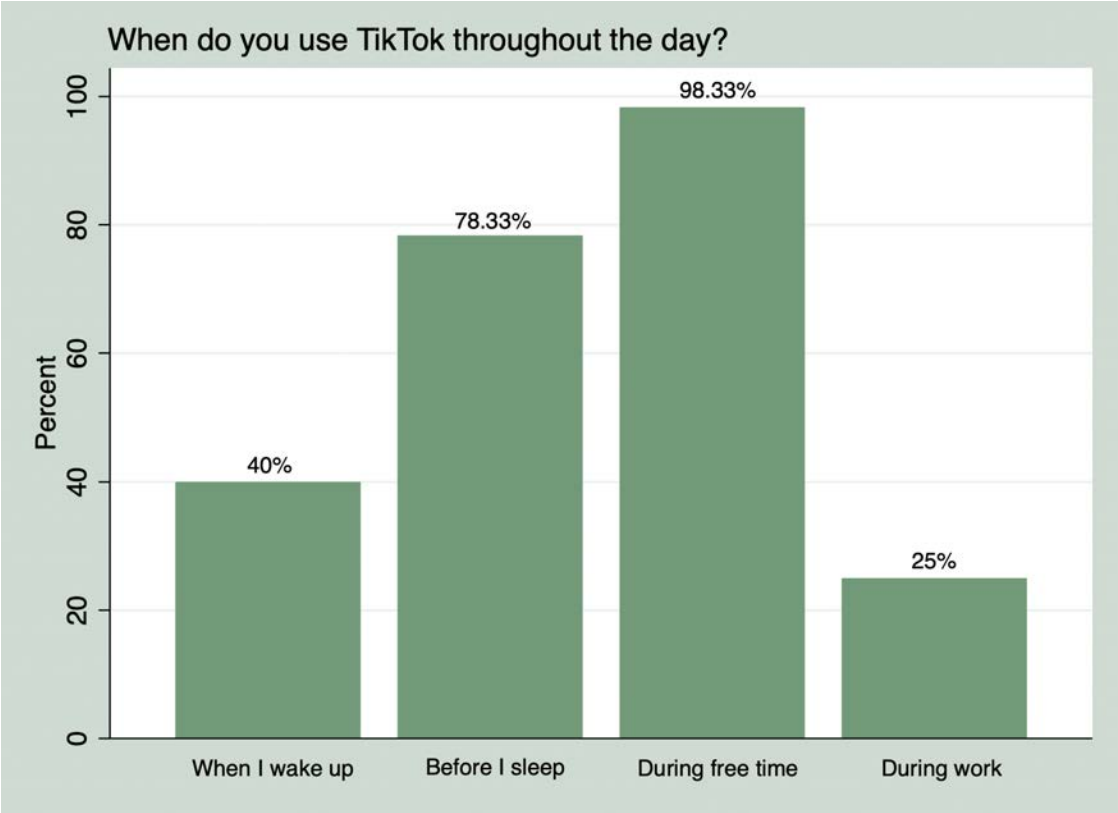

Figure 4.1 Histogram representing when participants typically use TikTok throughout their day.

Relatedly, some participants expressed concern about the effects of chronic social media use on sociability. One participant stated that he avoided excess time online because he was worried about becoming less sociable. He explained to me, “I prefer not to waste too much time on it because it can make you less social if you spend too much time on it.” There are some scholars who agree; for instance, Jean Twenge claims that social media are prisms that “amplify existing tendencies” already present within a given cultural context such as “narcissism, civic disengagement, and individualism” (Twenge 2013: 17). Though a harsh claim, it may not be entirely unfounded. As discussed in Chapter 3, some participants engage in an individually focused use of TikTok in which they get engrossed in the app’s stream of entertaining content. This highly immersive digital experience can make them more individualistic in the sense that they disconnect from the surrounding social environment. One participant describes how this tendency has affected her sense of sociability, as she says, “I feel like I do want to be really approachable and talk to people. I think everyone else feels the same as me, but people would just rather be absorbed in social media and online news than actually connect in real life which is a sad thing.” Her general opinion that most people prefer to be engrossed with the digital rather than be present in the moment motivates her relatively high TikTok usage. In continuing to use TikTok as a substitute for the offline connectivity she lacks, she worsens her ability to fulfill her desire for companionship. Apart from disconnecting through continuous social media use, some participants also note feeling less able to connect with others because they are “emotionally drained...almost like sleepy” after having watched too much TikTok. This suggests that some of the offline disconnection some young adults may experience is also because they are too tired to fully engage with others.

Conclusion

Exploring the interplay between TikTok and connectivity reveals a complex web of communication, validation, and relatability. Although there is some worry from scholars and members of older generations that increasing time spent online will completely replace offline interactions and relationships, it is clear that, for the most part, the digital is simply an extension of offline relationships. The array of participant examples demonstrates the various ways that relationships sustained online can be just as meaningful as those sustained offline. Nonetheless, the reliance on and importance of TikTok as a communicative and connective tool depends on the circumstances of each unique friendship and individual. For some participants, TikTok is another means of developing and strengthening intimate ties with friends by sending each other pointed content that evokes a positive response. For others, sharing videos maintains social ties without the need for more direct and personal digital interactions. The app also functions to successfully connect young adults to diffuse communities which, for some, may play a significant role in identity formation. For instance, consuming content made by others with similar identities increases opportunities for informal learning. This was particularly meaningful for queer youth, non-Pākehā, and Indigenous participants. However, while TikTok did have plentiful positive effects, it also caused feelings of disconnection among a small subsection of the sample. Because of the sense of community the app fosters, it forged a faux sense of constant connectivity that hindered some participants from fulfilling their desires for genuine social connection both on and offline. In this way, we can understand that feeling disconnected from others is not necessarily the same as the digital replacing offline interactions and relationships.

Chapter 5
The Cost of Scrolling: Understanding the Physiological Stress Response and TikTok's Influence on Well-being and Mental Health

Introduction

As social media have become increasingly prevalent over the past couple of decades, the relationship between social media use and well-being has become a topic of debate. Many previous studies have identified negative effects on well-being while others have claimed the opposite (Dutt 2023; Abeele et al. 2022; Kross et al. 2021; Wong et al. 2022; Toms and Dimitriou 2017). However, what this discrepant perspective lacks is the understanding that any negative or positive effect one might experience is dependent on the individual user. Kross et al. (2021) champion this middling stance saying, "There is nothing inherently 'good' or 'bad' about social media. Whether they help or harm well-being depends on *how* and *why* people use them, along with *who* uses them" (Kross et al. 2021: 56). In considering TikTok in the context of this study specifically, we have a sense of how, why, and who; young adults typically use the app as lurkers (watching videos rather than creating them) who consume and share videos amongst themselves as a form of communication with the aim to be entertained and satiate a desire for connection (Chapters 3 and 4). While most of the participants are similar in this way, their perceptions of how TikTok impacts their well-being are diverse.

A Well-being Boost: The Perceived Benefits of TikTok Use

Although almost all participants spoke of the perceived negative impacts (as will be discussed later in this chapter), a minority highlighted the apparent positive effects TikTok use has on their well-being. Yet, the definition of well-being varied across the sample. As a concept, well-being is highly subjective with different interpretations and definitions arising across

scholarship; however, it is typically understood to at least encompass life satisfaction, happiness, quality of life, and pleasure (Dutt 2023; Kross et al. 2021; Veenhoven 2010). Because emotional and physical health may impact these factors, scholars often emphasize the role of health in improving and maintaining well-being (Felce and Perry 1995; Dutt 2023). Along this same vein, other scholars underscore the value of social connection as a means of bolstering happiness through a sense of belonging thus claiming disconnection may instead lead to unhappiness and diminished well-being (Malone et al. 2012; Dutt 2023; Sjåstad et al. 2021; Diener 1984). Integrating social media within these definitions further complicates our understanding of well-being as we weigh the potential beneficial and adverse effects hyper-connectivity has on users.

A way social media platforms may enhance well-being is by facilitating connections. Gaining an increased sense of social connectivity to friends and communities was a pivotal motivator for TikTok use among many participants as discussed in Chapter 4. It is among this subsection of participants that we may expect there to be a more positive relationship between TikTok use and well-being. One participant embodies this, saying, “I think one positive effect is being connected with friends and sharing content and also learning new things and being exposed to new things.” In describing TikTok as a platform that fosters connectivity and communication, this participant illustrates how social media use may enhance her personal sense of well-being. Similarly, another participant touches on the positive effects of watching relatable content made by people with similar identities, describing, “I think if I didn't have TikTok, I would just be spending more time on another social media app, but TikTok specifically probably helps my overall well-being in terms of being able to educate myself and being able to see other people who experience things like me. It's kind of very unifying.” Interestingly, while numerous participants touched on the importance of connectivity in driving their continued TikTok use,

very few aside from the quoted participants explicitly mention whether their increased access to on-demand, digital connectivity positively impacts their well-being. This may be because hyper-connectivity has become so entrenched in how young adults navigate their daily lives that they do not immediately register it as a factor that impacts their well-being. That is, having a healthy relationship with digital sociality may have a more neutral effect on well-being than otherwise expected.

Instead, participants place emphasis on other aspects of TikTok as positively affecting their well-being. For instance, the above participants mention "learning new things" and "being able to educate [her]self," respectively, indicating that they also value content that is not necessarily rooted in contriving connection. One reason behind this may be that these participants feel as if learning something while scrolling through TikTok makes the trade-off of the time spent online versus offline worthwhile. A different participant alludes to this, saying,

> I would rather scroll on TikTok than I would on Instagram. I'd rather scroll on TikTok than scroll on Facebook because at least I might have learned a tiny, little tidbit that day rather than scroll through pretty pictures of people [on Instagram or Facebook] that I don't really talk to anymore. It's like a way I use to kind of relax that's not so harmful as Instagram is for me.

Because participants largely do not see content made by people they know on TikTok and instead are fed content suited to their preferences, some may have fewer experiences with negative comparisons on TikTok compared to other social media platforms. The difference in platform-specific content types could be an important factor when considering well-being; this is because a concern scholars have raised is that social media increases the opportunity for negative self-comparison which may result in increased feelings of unhappiness and lowered self-esteem (Talwar et al. 2019; Diener 1984). For the above participant, Instagram and Facebook are platforms that may promote this harmful behavior as they host posts by people she may feel

more compelled to compare herself to. As such, TikTok instead seems to provide a benefit as it lessens her exposure to some negative comparisons.

With this in mind, it becomes clear that content type and the emotions it evokes plays a pivotal role in one's perceptions of their well-being. This is demonstrated across a variety of other participants who note that watching enjoyable or uplifting content yields positive effects on their emotional well-being. These ranged from getting in a good laugh to feeling inspired. One participant explains this by saying, "I think occasionally I do get a positive effect from [TikTok] because seeing certain content can make me feel happier or more fulfilled." Although this participant did not elaborate on what kind of content evoked these feelings, many others shared the same sentiment that motivational content left them feeling momentarily contented. A different participant provides an example of this, saying, "I definitely like seeing inspiring videos. I follow Jazz Thornton, she's a mental health advocate, and just things that are uplifting are better rather than scrolling for hours and not seeing anything nice." Whether through following certain content creators or stumbling upon the content on one's "For You Page," feel-good content stands out from the monotony of other social media platforms. The positive sentiments described here are similar to those felt by participants who enjoyed the educational side of TikTok. In both cases, the content leaves participants feeling as if they have gained some kind of helpful knowledge or fulfilling experience.

While for some participants feel-good content is educational or motivational, for the vast majority it is also simply entertaining videos. Following the viewing sessions, participants completed a viewing responses questionnaire reporting their reactions to the content they had seen. Half of the participants (N=30) indicated having overall positive or very positive feelings after watching their own curated "For You Pages" (Figure 5.1). Participants often conflated their

positive emotions with being entertained and feeling relaxed. For instance, one participant stated that “I felt normal and relaxed. I wasn’t 100% aware of my surroundings but was drawn into the TikToks because they were entertaining for me.” Interestingly, there is a positive relationship between seeking out audiovisual media for entertainment and relaxation (Khan 2017). This is because entertainment provides viewers with a sense of escapism, enjoyment, anxiety reduction, and relaxation (McQuail 2005). Various participants alluded to this in their interviews describing watching TikTok as “soothing and calming to watch” as well as “a way to destress.” Such effects are discernable across the participants’ HRV data (Figure 5.2). Notably, there is a statistically significant difference ($t(59) = 4.6315$, $p < 0.0001$) between the mean baseline high-frequency HRV (HF-HRV = 5.7) and the mean reactivity HF-HRV (HF-HRV = 6.0) recorded while participants watched their own “For You Pages.” The higher reactivity HRV indicates an acute relaxing effect caused by watching TikTok. This relaxing effect is similarly experienced by the participants who watched a random “For You Page” during the second viewing session. As such, the difference in HRV response to watching TikTok between the two treatment groups is not significant (Figure 5.3; $t(57) = -0.0158$, $p = 0.9874$). This lack of significant difference may indicate that the action of consuming audiovisual content is in and of itself relaxing rather than the specific type of content having a relaxing effect.

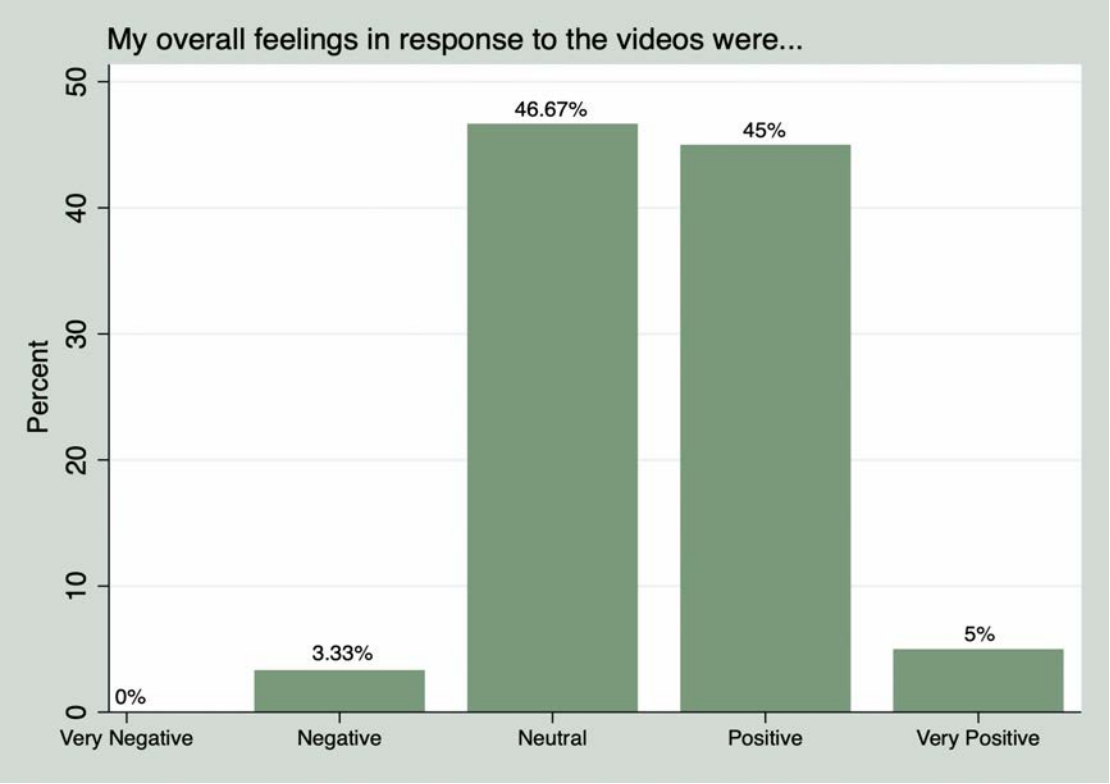

Figure 5.1 Distribution of feelings after watching own "For You Page" during the first 5-minute viewing session. The frequency of responses is numerically shown above the corresponding bar.

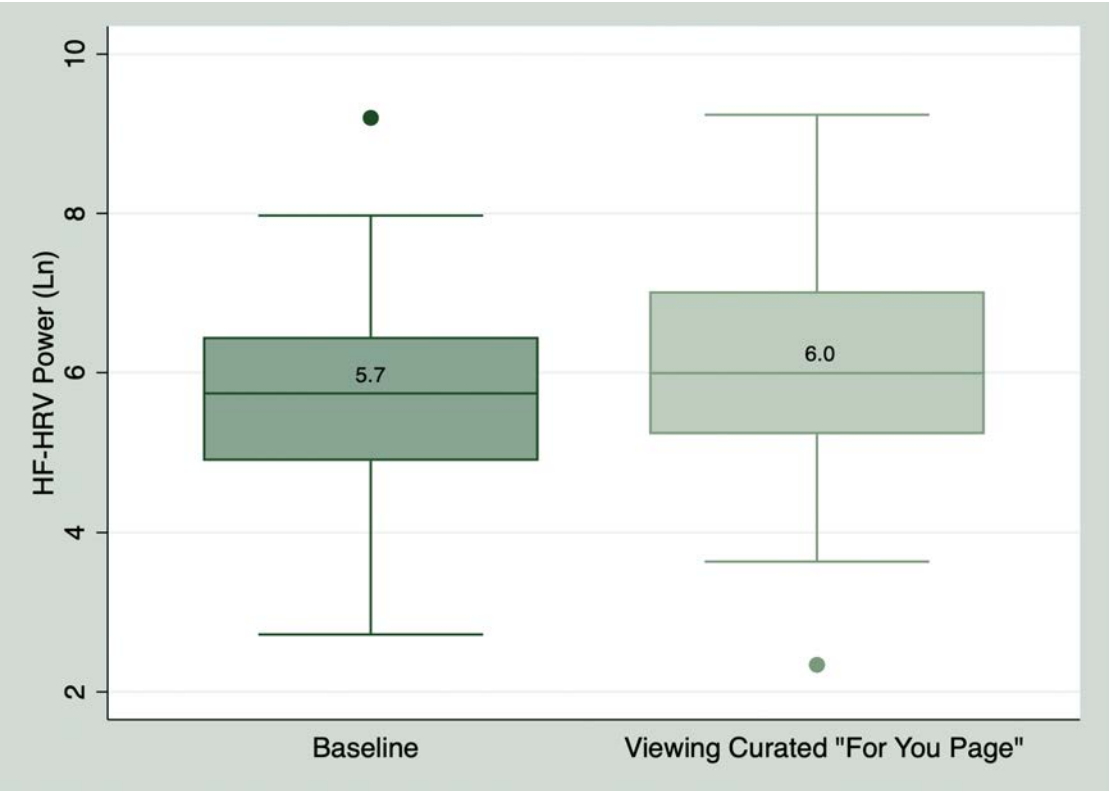

Figure 5.2 Box plot of the mean HF-HRV values collected at rest (baseline) and when watching TikTok (participants' own "For You Pages"). The difference is significant at $p < 0.0001$.

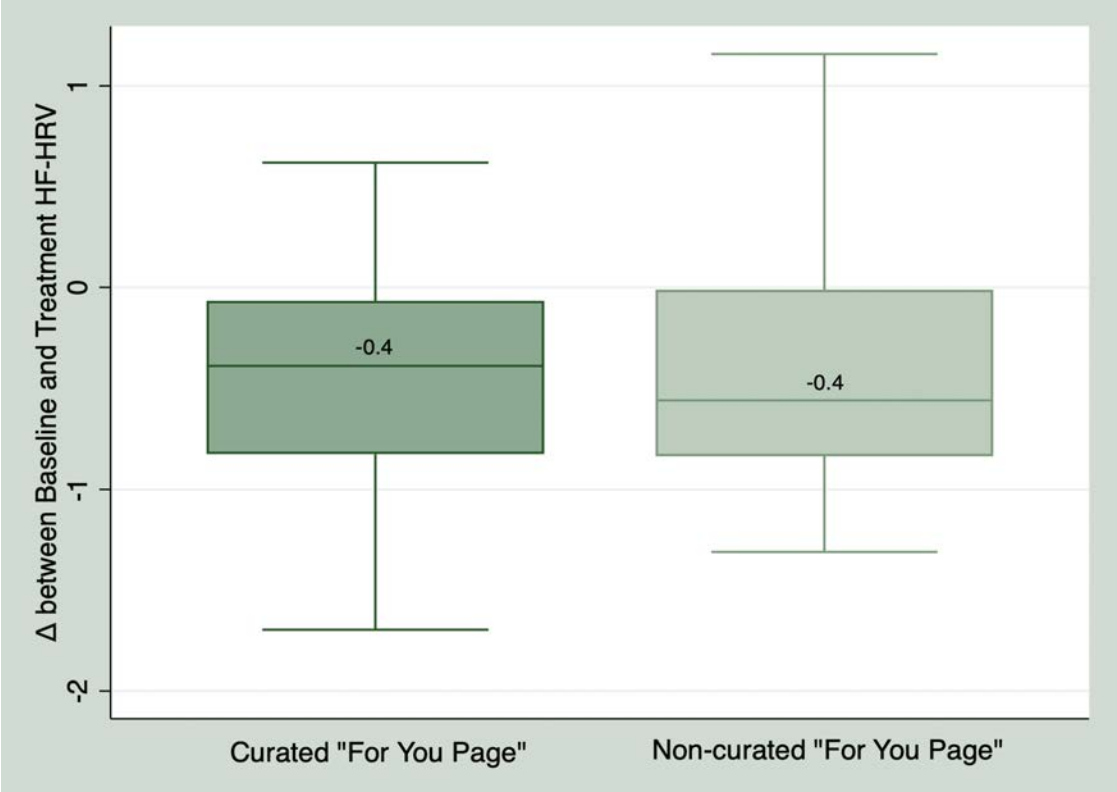

Figure 5.3 Box plot of the difference between baseline and treatment HRV for participants who watched the curated vs. non-curated "For You Pages." The difference between the treatment groups is not significant.

A Harmful Habit: The Effects of Excessive TikTok and Phone Use on HRV

The acute benefits of watching TikTok may mask the negative effects chronic phone and social media use have on health and well-being. In large part, the evolution of smartphones into recreational devices prompts their owners to gravitate to them when seeking to alleviate boredom and fill free time (Hodes and Thomas 2021; Fullwood et al. 2017). Importantly, TikTok seems to establish itself as an app to continuously revisit because its users—such as the participants quoted above—associate it with the generally positive effects of relaxation and entertainment. In this vein, as TikTok becomes more integrated into the milieu of phone use, individual users shape their use behaviors in ways that may inadvertently increase their overall phone screen time. This becomes apparent within the sample through what some participants identify as habitual and addictive TikTok use tendencies.

These tendencies seem to be established over time as can be discerned when considering quotes from participants who have been using the app for varying amounts of time. Particularly, participants who started using the app more recently (i.e., within the past year) largely spoke about TikTok positively. For instance, one participant says, “I find TikTok very entertaining, so I go to it to have fun and loosen up. I usually watch it at night before I go to bed and it's very fun to sink your time into it and just keep scrolling and scrolling.” This participant clearly perceives his TikTok use to be benign. However, we can note the beginning of what has the potential to turn into excessive app use as he notes the way in which he spends extended amounts of time scrolling before bed. In continuing this use behavior, this participant may interweave his TikTok use into his nightly routine because he perceives there to be a net benefit from using the app. In contrast, a different participant who has been using the app since the latter half of 2019 offers a more nuanced view of TikTok’s positive and negative effects, explaining,

> I feel like scrolling can make you feel really shit sometimes…I definitely feel like [TikTok] can be very unbalanced because if I'm using it in a positive way and it's impacting me positively because I’m seeing cool videos… that's fine, but it's not amazingly great. But then the negative side of it like doom scrolling or feeling isolated can be really amazingly bad. It can be a little bit positive, or it can be a lot negative.

As users spend more time on the app there are more opportunities for them to experience and become aware of how the negatives like those described by this participant affect them. Yet, even when the positives and negatives are unbalanced toward the negative, participants still use the app.

A way to rationalize this behavior is considering how, for some, TikTok use has reached the point of becoming habitual. Many participants expressed how using the app has become a “regular part of [their] bedtime routine” in addition to scrolling through videos to fill the latent time when they have “nothing to do with [their] hands” (see Fig 4.1 for when participants use

TikTok throughout the day). This behavior may have ties to impulsive reactions to readily available technology such that existing in a media-saturated environment with devices like smartphones at hand feeds into the formation of habitual use (Van Koningsbruggen, Hartmann, and Du 2018; Abelee et al. 2022). Additionally, other scholars point to psychological characteristics like the anticipation of unpredictable rewards—for example, maybe the next video will be really entertaining—as another mechanism for drawing young adults back into social media platforms (Griffiths 2018).

A major consequence of this habitual use is that scrolling can quickly devolve into a mindless action. Many participants note how they feel less intentional when using TikTok compared to their earlier use when they first downloaded the app. As one participant details, "All the time when I'm looking at TikTok, it becomes mindless. It's not like I'm thinking about going onto the next TikTok or even keeping the app open. It's sort of like I just go into a bit of a trance." This trance-like state may be credited to the audiovisual format of the content as well as the typically short length of each video. Coupling this with the relaxing effect discussed in the previous section, we may glean how users become engrossed in the stream of content and lose track of time. While our immediate assumption may be that this behavior is always unintended, it is worthwhile to revisit the idea of escapism as a motivation for use (see Chapter 3). It is possible that participants interpret this trance-like state as relaxation, using it to disconnect or escape from their surroundings (Larson 1995; McQuail 2005). However, even when this effect is at first deliberately sought out, it can eventually result in negative sentiments. A different participant describes this, saying, "Sometimes I do feel like if I've been sitting there scrolling for a while that I wish I could get up and do something else, but I feel compelled to keep scrolling. I'm definitely very aware of that and know it doesn't contribute anything good to my well-being."

Feeling compelled to keep using the app in this way points to how some participants may not have as much control over their use behaviors as they may believe which can result in any potential positive effects becoming negative instead.

In extreme cases, this mindlessness and lack of control can point to addictive social media use. While the literature around social media addiction is diffuse (Bányai et al. 2017; Griffiths 2018; Abeele et al. 2022; Andreassen and Pallesen 2014), it is here understood as maladaptive use characterized by behavioral addiction-like symptoms and reduced self-regulation (Sun and Zhang 2021). Across the sample, participants showcase tendencies that align with those associated with behavioral addictions to internet and social media use such as feeling compelled to open the app at random or even being unable to break away from the app during viewing sessions (Alavi et al. 2012).[3] Essentially, participants are hooked on the feelings (e.g., disconnection from their surroundings, relaxation) brought about by using TikTok. TikTok intentionally feeds into this through its highly engaging design of the curative "For You Page" meant to prolong user stay on the app (Montag, Yang, and Elhai 2021). As one participant describes,

> The longer you spend on the app, the more the algorithm reads you, and the more it gives you a mix of everything. If my "For You Page" is all people saying inspirational quotes or life coaches, then obviously I would want to keep going on TikTok. But even if it's other things, I would still go on it while knowing that it's giving me a negative impact. No matter what I would keep watching it.

What is especially telling of the efficacy of TikTok's "addictive" design is that even when participants are aware they are feeling negative effects, they choose to continue to use the app. Another participant offers his perspective on why young adults like him do so, explaining, "I

[3] Participants did not complete social media addiction scales and are not quantitatively classified as addicted versus not addicted in this study.

kind of want to make this analogy: TikTok is like porn. Your brain is so addicted to it because it creates something like a dopamine rush, and you just can't stop watching it anymore." In fact, some scholars suspect that dopamine release may be one contributing factor in why young adults continue to use TikTok as the anticipation of what one might see and the potential for validation contribute to a dopamine-driven feedback (Macit et al. 2018; van Hooijdonk 2021). Regardless of whichever mechanism is driving increased use for a given participant, the resultant reduction in self-regulation actively contributes to increasing time spent online rather than off.

It then follows that as some participants exhibit habitual and addictive TikTok use tendencies, their overall phone screen time is generally higher than other participants who limit their time online. Notably, screen time was associated with baseline HRV in this sample, with greater phone use associated with lower mean baseline HRV after adjusting for covariates (Figure 5.4; $B = -0.004$, *adjusted model* $r^2 = 0.2078$, $n = 57$, $p = 0.002$). This negative association indicates that there may be a detrimental relationship between excessive phone use and autonomic nervous system functioning. However, in line with previous research, there is not a statistically significant association between time spent on TikTok and mean baseline HRV (van Hooijdonk 2021; Margousian 2020). Yet, time spent on TikTok is correlated with overall phone use across the sample ($r = 0.2878$, $n = 57$, $p = 0.03$) such that its contribution to increasing overall phone screen time seems to adversely affect baseline HRV. Since HRV is an index of autonomic nervous system functioning, lower HRV acts as an indicator of a range of potential adverse health outcomes. Namely, reduced HRV is linked to an increased risk of cardiac morbidity, mortality, and negative psychopathology (Bourdon et al. 2018; Kristal-Boneh et al. 1995). With this in mind, the excessive phone use identified across the sample suggests that some participants may be more vulnerable to stress and disease (Kim et al. 2018).

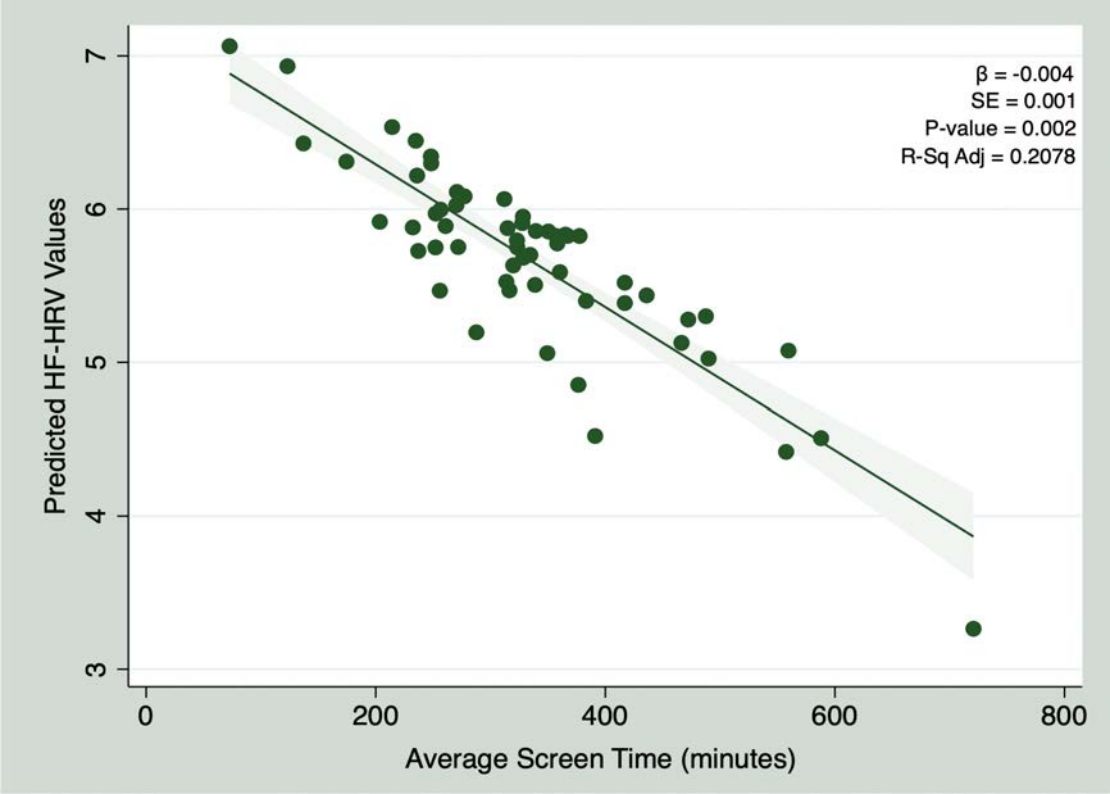

Figure 5.4 Adjusted multivariate model depicting the negative relationship between average phone screen time over a two-week period and predicted baseline HRV values after adjusting for PHQ-9 scores and lung conditions. The corresponding linear trend and 95% confidence interval are included.

The association between phone use and baseline HRV may be mediated by how time spent on TikTok adversely affects participants in day-to-day life. For instance, many participants use TikTok at various points throughout their day even at times when they probably should not, whether that be during class, at work, or while doing assignments. One participant describes this, saying, "[Using TikTok] is probably what I do more in class than I do paying attention. It's not a good thing, but it's there so why wouldn't I just watch it?" Using social media during inopportune times can lead to and augment feelings of stress among university students who may already feel school-related stress (Zhao 2021; Aydogan and Buyukyilmaz 2017). Participants like the one above note that they indeed "get stressed out" because of the distracting time spent "procrastinating on TikTok."

Further, aside from directly impeding on responsibilities, participants also mention how they lose track of time when watching TikTok before bed resulting in direct impacts on their sleep. Various participants touch on this as one illustrates, “When it comes to sleep, it's really bad because you'll find yourself maybe wanting to use [TikTok] for 5 minutes and then it turns into an hour or two and you just can’t sleep.” Reduction in sleep because of social media use is not uncommon; individuals who excessively use social media on average sleep one hour less and are more likely to develop a host of problems related to sleep quality, latency, and duration than those who do not spend as much time on social media platforms (Toms et al. 2017; Mei et al. 2022). Strikingly, impaired sleep has been linked to decreases in baseline HRV which may be because consistent sleep deprivation can cause hyper-activation of the sympathetic nervous system (Bourdillon et al. 2021). This suggests that excessive TikTok and phone use impede other activities (i.e., sleep) that may be protective against lower HRV and its associated health outcomes.

Mental Health and Social Media: TikTok’s Place in the Debate

Similar to how many participants are attuned to the consequences of excessive phone use, they are also aware of the ways TikTok specifically impacts their well-being and mental health. Often, participants conflate the two, viewing them as highly intertwined concepts that directly impact the other. This same line of thinking is often pointed to amid concerns that social media use may not only impair well-being but, in the worst cases, cause mental health conditions among young adults (Amedie 2015; Karim et al. 2020). However, this may not be entirely true as scholars debate the directionality of the social media use/mental health relationship, stating that individuals who experience depression and anxiety may gravitate to social media more than

others (Miller et al. 2016; Keles, McCrae, and Grealish 2019). In line with this camp, participants mention how TikTok use can momentarily cause negative sentiments that at times aggravate already existing mental health conditions. These sentiments seem to arise from the time spent on TikTok and the content seen.

The stress associated with the unproductivity caused by spending too much time on TikTok was frequently cited as negatively affecting well-being. As previously discussed, this stress can act as an extra burden for the average university student, but it may actually worsen symptoms associated with mental health difficulties (Karim et al. 2020). For one participant who expressed ongoing struggles with mental health during her interview and had PHQ-9 and GAD-7 scores[4] indicating both severe depression and anxiety, this is an unfortunately common occurrence. She explains,

> It's just this whole awful cycle of, "Oh, this is fun to watch, I have free time. Let's watch." And then three hours later I'm like, "Shit! Is there something I'm meant to be doing today?" I feel like it just pushes the cycle of unproductivity, especially during uni [university] time…and then it just pushes my mental health down because I feel really guilty and then feel more anxious and depressed."

This participant's continued use of TikTok in the face of her mental health difficulties is likely related to how some young adults use social media as a coping mechanism for their anxiety and depression (Elmquist and McLaughlin 2018). This seems to hold true across the sample when weighing TikTok's relaxing effect and the wide range of generalized anxiety (i.e., minimal, mild, moderate, severe) experienced by participants (Figure 5.5). However, a lack of self-regulation may in turn lead some users into a cycle of use that actually worsens their mental health and

[4] The PHQ-9 scores are calculated as a summation of the questions (0-27) with various cut-offs for differing levels of depression severity including minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19), and severe (20-27) depression. The GAD-7 is also a summation of the questions (0-21) with cut-offs for minimal (0-4), mild (5-9), moderate (10-14), and severe (15-21) anxiety.

well-being such as this participant whose feelings of guilt amplify her harmful mental health experience.

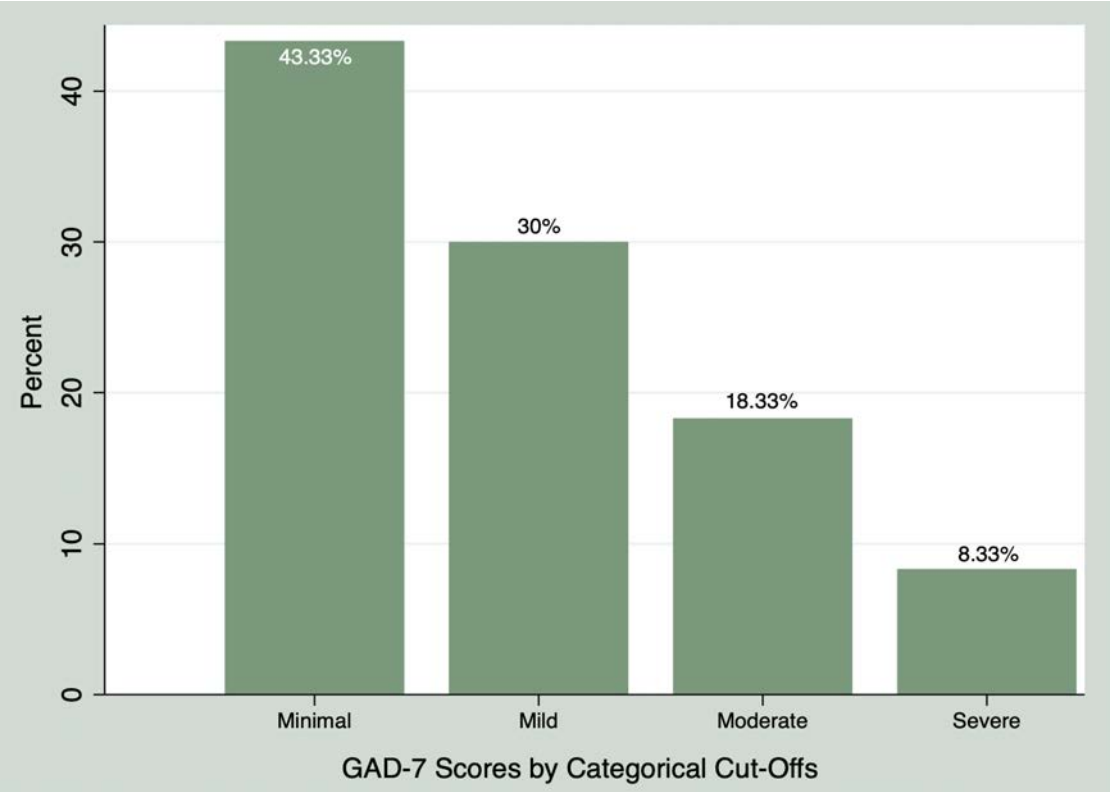

Figure 5.5 Distribution of anxiety by the level of severity as determined by the GAD-7. The percentage of responses is numerically shown above the corresponding bar.

Importantly, this same detrimental cycle also applies to the small subset of participants experiencing moderate to severe depression (Figure 5.6). Another participant who described a nearly identical experience as the one above touched on how TikTok perpetuates these cycles of harm, describing, “I find that when I'm not feeling good and I don't have motivation to do anything, something that I would have motivation or enough energy to do would be pick up my phone and open TikTok. That kind of is enabling me to stay in a slump.” Because the action of using TikTok can be both relaxing and mindless, it is a really easy platform to sink time into especially if and when other responsibilities can feel overwhelming. Yet, losing track of time on TikTok impedes one’s ability to spend time doing other things including engaging in healthier

coping mechanisms. However, something that is particularly interesting is that neither the severity of anxiety nor depression symptoms were significantly associated with increasing TikTok and phone screen time in this sample (Figure 5.7). That said, many of the participants who spoke about the negative effects of TikTok use on their mental health are those who scored the highest on the PHQ-9 and GAD-7 scales. This suggests that simply experiencing more severe mood and anxiety disorders can result in perceptions of worse negative effects regardless of the amount of time spent on the app.

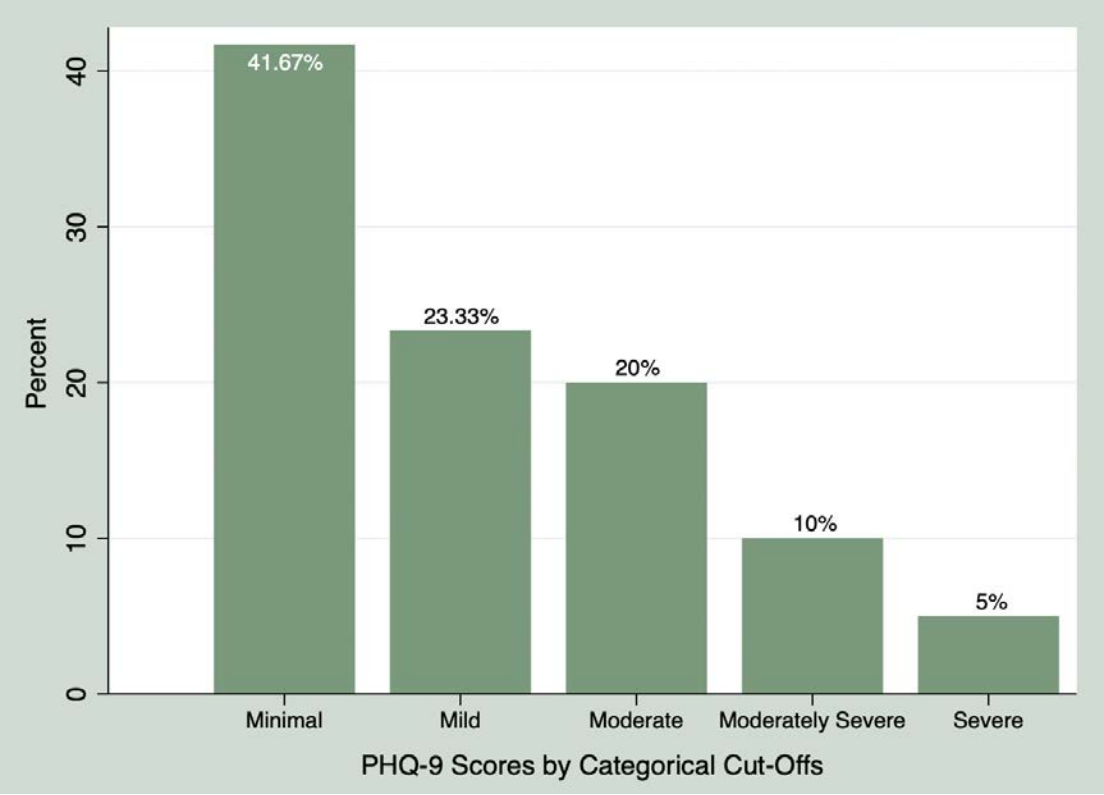

Figure 5.6 Distribution of depression by the level of severity as determined by the PHQ-9. The percentage of responses is numerically shown above the corresponding bar.

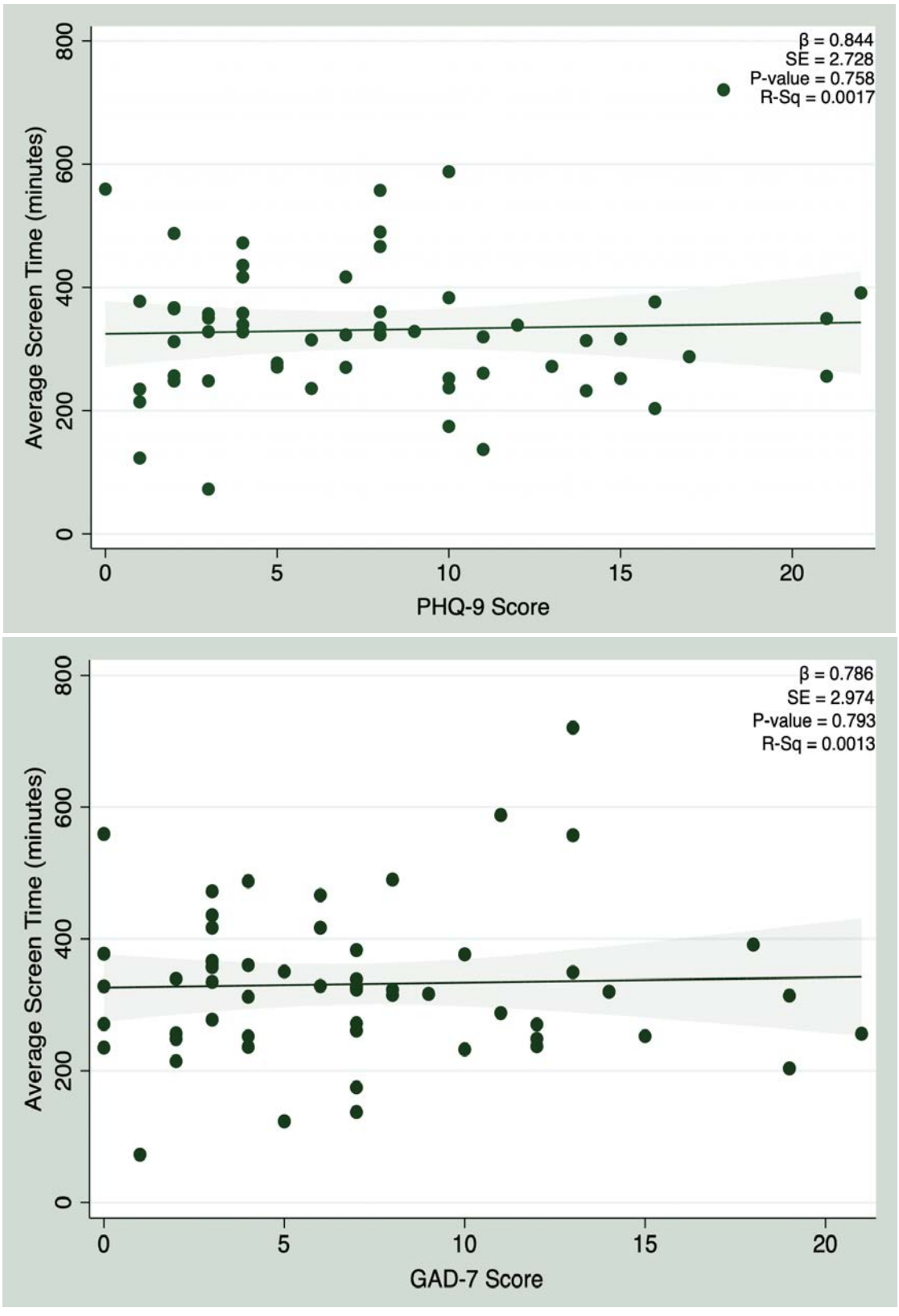

Figure 5.7 Bivariate models depicting the lack of significant relationships between average phone screen time over a two-week period and PHQ-9 (top graph) and GAD-7 (bottom graph) scores. The corresponding linear trend and 95% confidence interval are included.

Contrary to other studies, depression and anxiety are not significantly associated with reduced baseline HRV in both the adjusted continuous and dichotomous analyses (Figure 5.8; Dell'Acqua et al. 2020; Chalmers et al. 2014). Although there is no significance in this study, the association between depression and anxiety with lowered baseline HRV found in other studies indicates susceptibility to a myriad of physical health problems. As such, it is essential to promote healthier TikTok use habits that may lessen the exposure to aggravating negative effects of social media use.

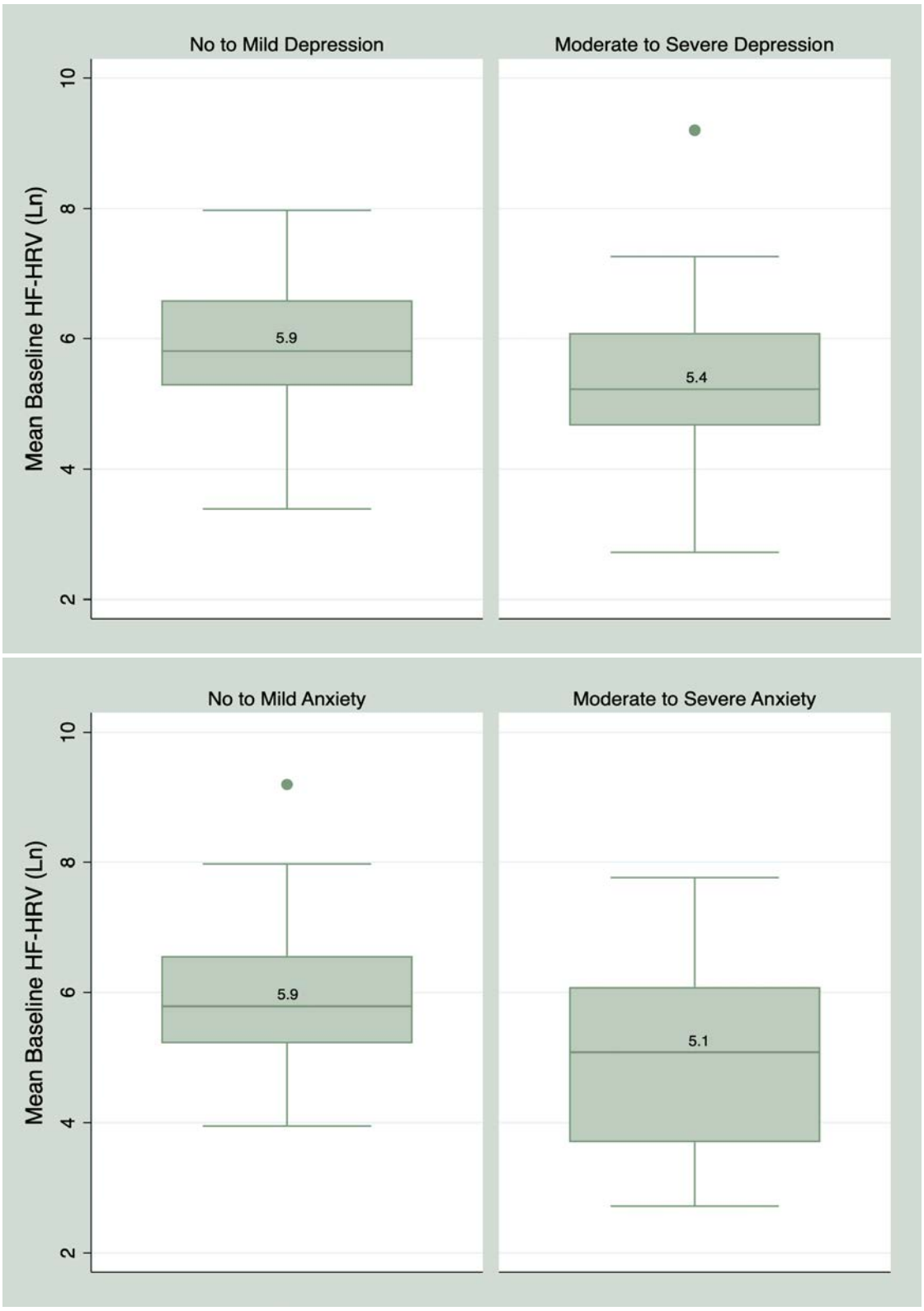

Figure 5.8 Box plots of the mean baseline HF-HRV values by categorical depression (top plot) and anxiety (bottom plot) groups. No to mild depression includes PHQ-9 scores below 10 and moderate to severe depression includes scores equal to or greater than 10. No to mild anxiety includes GAD-7 scores below 10 and moderate to severe anxiety includes scores equal to or greater than 10. The difference is not significant in either model.

The other aspect of TikTok use participants frequently named as negatively affecting their well-being and mental health is the unpredictability of content on their "For You Page." Although this unpredictability or randomness is good at ensuring users see novel content that is generally suited to their interests, it can sometimes result in a disjointed stream of videos. For example, during times of political unrest it is not uncommon to see a comedic video followed by distressing news coverage followed yet again by something funny. One participant describes this well, explaining, "It can be negative for my mental health because there are some things that I've seen or things that people share that are quite deep and emotionally challenging. And when you're scrolling your 'For You Page,' you just don't have a warning of that coming up." Stumbling upon videos that abruptly evoke strong affective responses can cause a sort of emotional whiplash that leaves some participants feeling worse than when they first opened the app. This is especially true when thinking about users who may be using TikTok as a coping mechanism for their anxiety and depression. A different participant notes how these types of occurrences affect his mental health, saying, "My mental health is definitely not the best so when I get something that's quite confronting on my TikTok in a time when I'm trying to just relax and not think about the world…that can really spiral me and send me a few steps back." The disruption caused by these random, charged videos can accidentally force young adults to confront the same negative emotions they may have been trying to avoid by being on TikTok in the first place. Because of this, we can understand TikTok not as causing mental health issues but either detrimentally contributing to them in some cases while in others not allowing for the escapism individuals seek.

Conclusion

The relationship between TikTok use, well-being, and mental health is one that is highly variable. The potential positive and negative effects of social media use are contested across the literature as scholars weigh differing users' personal experiences and perceptions. However, for participants in this study, the distinctions between positive and negative are often blurred as many of these young adults have experienced both at one time or another. In large part, the positive effects of using TikTok are related to feelings of connection and fulfillment. In addition to these feel-good sentiments, participants also noted using the app as a way to destress thus contextualizing the physiological relaxation they experienced while watching TikTok during the 5-minute viewing periods. On the other hand, participants who spoke of the negative effects noted how acute moments of relaxation, connection, and entertainment can devolve into problematic TikTok use. The resultant prolonged and chronic use characterized by high levels of screen time is associated with reduced baseline HRV or a state of physiological stress across the sample. Occurrences of losing track of time on TikTok and the way excess time spent on the app impedes other responsibilities can have detrimental effects on participants with pre-existing mental health conditions by exasperating harmful symptoms of depression and anxiety.

Chapter 6 Conclusion

Key Findings

This thesis explored the effects of TikTok on perceptions of social and cultural connectedness among young adults in Auckland Aotearoa NZ as well as the physiological response to TikTok and phone use. I was eager to understand how the ubiquity of social media platforms like TikTok and the allure of the content they host impact how and why young adults spend varying amounts of time on them. Additionally, I wondered about how experiences with TikTok and phone use affect autonomic nervous system functioning. With this in mind, I sought to tackle questions about motivations for use (Chapter 3), connection and disconnection (Chapter 4), and well-being, mental health, and physiological stress response (Chapter 5).

Something that became quickly apparent across the sample was how common it is for young adult social media use to be driven by social influence. This finding is in line with prior studies examining the role of peer pressure, influence, and FOMO among teenagers and young adults (Lenhart et al. 2015; Ross 2019; Przybylski et al. 2013). With TikTok specifically, many participants began using the app either because it seemed as if the majority of their peers were using it or because of direct pressure from their friends to download the app. However, while consistent TikTok use enables young adults to remain "socially conversant" by gaining knowledge about trending topics, the promise of a curated "For You Page" was widely regarded as one of the main reasons to continue using TikTok. TikTok's curative algorithm provides users with a seemingly more intimate space within the larger digital sphere.

This desire for intimacy reveals the unique relationship young adults have with the digital. Being virtually plugged in has become so integral to their lives that it is hardly ever questioned. Because using social media is a given for so many of the participants, they instead

seek ways to remain passively plugged in as discussed by Şot (2022) in a study on user-platform intimacy among TikTok users in Turkey. TikTok offers this by positioning the vast majority of its users as consumers of content rather than the creators of it. In doing so, users are granted the freedom to enjoy a digital space of their own populated with videos of interest in contrast to the type of content they may see posted by friends and family on other social media sites like Facebook or Instagram.

Within these personal spaces, young adults reap the advantages of seeing content created by a massively diverse range of people from all over the world. With it they may bolster their existing friendships by communicating through the content of these videos, revealing and connecting with each other via shared humor and interests. For most participants, this digital interaction was a mere supplement to their offline interactions while for a few others, it played a more central role in their interactions with friends. Importantly, this shared sentiment underscores how there may be a disconnect between existing scholarship and the lived experiences of young adults wherein participants did not see the digital as supplanting their offline interactions (Chambers 2013; Twenge 2013; Ling and Campbell 2011). Further, beyond augmenting connections across pre-existing relationships, participants stressed the importance of TikTok in positively connecting them to communities they felt they had restricted access to offline. Whether it be affinity, cultural, or ethnic groups, accessing the knowledge these videos communicate was described as having positive implications on young adult identity formation.

Despite these many perceived benefits relating to social and cultural connectivity, there were participants who raised concerns about how the amount of time spent on the app can lead to offline disconnection. Excessive use distracts users from their surrounding environments as well as takes up time they could be spending with others. What is particularly interesting is that this

concern raised by a few participants was spun into a positive by others when thinking about using TikTok as a way to relax and destress. The disconnection was instead seen as an escape during which they could be entertained, informed, fulfilled, and connected to online communities. Mention of these positive effects of TikTok use was especially intriguing to consider in conjunction with the physiological relaxing effects participants experienced while watching TikTok during their data collection sessions.

Nonetheless, despite the acute relaxing effect and the positive perceptions of social and cultural connectivity, I found that participants experienced more detrimental effects on autonomic nervous functioning the more time they spent on their phones. The lower mean baseline HRV associated with increased phone screen time may in part be due to how that time is being spent such as scrolling rather than sleeping. Further, while depression and anxiety were not predictive of TikTok and phone use, those with more severe anxiety and depression qualitatively noted how excessive TikTok use can worsen their mental well-being. Yet, despite acknowledging these negative effects, participants candidly spoke about actively choosing to continue using TikTok.

Limitations

Throughout the research process, I reflected on aspects of the study I would expand upon if I were to do the project again. For instance, while I met my recruitment goal of 60 participants and was adequately powered for the analysis, the experiences that I detail in this thesis only scratch the surface of what is surely a vast array of different interactions with phone use and TikTok. Retrospectively, I would allot significantly more time for each session in order to have been able to expand on the conversations I was having with the participants. Further, I think it

would have been fascinating to supplement my findings with observations from locations like university common areas where I might have been able to compare the types of social media use behaviors described by participants with examples from outside of the lab space. In doing so, I might have witnessed how watching TikTok videos in public isolates an individual from their surrounding social setting or even might have witnessed people talking about TikTok videos they had watched or sent each other. Observations like these would have been an interesting value-add in Chapter 4 where I discuss the effects of TikTok and phone use on sentiments of connection and disconnection.

During the data collection period, I was very aware of the demographic makeup of the participants of which 95% were full- or part-time students and 51.67% were Pākehā. Because I mainly advertised the study in areas frequented by university students, the sample is almost entirely made up of this specific population of young adults. As such, the study inherently excludes the experiences of young adults who are not able to or choose not to attend university for whatever reason. There is also the possibility that the study excludes other unique experiences from lower-income as well as non-Pākehā individuals because of a harmful history of extractive research conducted in Aotearoa NZ which may dissuade some from participating (Campbell 1989; West-McGruer 2020). I believe this may be a significant factor in why the sample is predominantly Pākehā. For example, although I partnered with Māori researchers and their colleagues to distribute my recruitment materials to Māori young adults, the indigenous population only accounts for a small subset of my overall sample. Additionally, concerns about the sessions taking place indoors and the risk of contracting COVID-19 may have also been a barrier to participation. I think having been able to include underrepresented experiences may have shed light on different use behaviors. Perhaps young adults who are working to financially

support themselves are spending less time on TikTok because they do not have the time to do so. Or, perhaps those who are not attending university rely on TikTok and other social media more than others to gain a sense of connection to communities.

I also noticed the frequent occurrence of many participants being close friends with other young adults in the sample. This is likely because of the use of snowball sampling wherein many later participants were recommended by friends who had previously completed the study. As such, the use behaviors and perceptions of TikTok discussed in this thesis may be more representative of a specific type of user behavior shared across these young adults who associate with similar social networks.

Another factor that may have affected how participants engaged with me, responded to the TikTok videos they watched, and answered questions during the interviews is the similarity in age between myself and the participants. A few participants said that they were surprised by my being so similar in age to them. One even mentioned feeling worried about being judged for their TikTok preferences because they assumed I would be able to tell what kinds of videos they were watching from the video sounds playing out loud. I attempted to account for this by offering the option to use headphones during the viewing sessions, however, most participants chose not to.

Other limitations that arose relate to the experimental design which only accounts for acute responses to TikTok in a controlled environment. Watching TikTok for 5-minute intervals in a lab space where you are being observed is not reflective of how, when, and where participants normally use TikTok. As such, there is the possibility of "white coat syndrome" whereby being in the lab space may have added pressure to behave or react in certain ways which may have impacted participants' physiological responses (Pioli et al. 2022). I think it

would have been interesting to design the study in a way that captured HRV data both in the lab space and in a more "natural" setting.

Recommendations for Future Research

The present thesis details a host of data that should be used as a steppingstone to more in-depth research examining the intersection of technology, social and cultural connectivity, well-being, and human health. Future studies interested in exploring the relationship between social media use, identity formation, and community connection should conduct research with diverse populations in varying cultural contexts. I believe it could be especially fruitful to begin working with younger individuals (e.g., children and teenagers) who use social media to gain insight into how access to these platforms during their early formative years impacts their social behaviors and self-conception. There are also opportunities to explore identity and community connection among other demographics such as migrant populations who may be geographically separated from their culture and supportive communities. Work taking this approach should consider motivations for the use of both the viewers and creators of educational, informative, and cultural content. It would be interesting for such research to examine whether the amount of this type of content consumed or created affects the individual's sense of belonging to both or either their host or home communities.

For all of the good and bad social media has to offer, it is important for social science research including biocultural approaches to start off with a neutral stance on the role of social media. The demonization of these platforms is at the heart of the debate surrounding the directionality of mental health outcomes and social media use. While this debate is an important one, it is essential for researchers to understand that even if social media use has detrimental

effects on users, there will always be those who still choose to use it. Studying *why* people continue to use these platforms even when they do have detrimental effects on their mental and physical health may lead us to gain vital information on how to promote healthier use habits. Similarly, comparative research can illuminate whether there are significant health differences and/or improvements in quality of life among those who have decided to stop using social media altogether or have identified ways to use social media positively versus those who spend more time on those platforms. Studies doing so have the potential to examine how free time is used differently, the strength of social connections with friends and communities, and factors relating to physical health including sleep quality.

Lastly, I believe there is much-untapped potential in using HRV analysis across biological anthropology research in the stress and well-being sector. For example, future researchers interested in the physiological response to social media use should assess long-term HRV. This may reveal whether the magnitude of the relaxing effect of TikTok is a function of the length of the given viewing session. Additionally, a study design utilizing a longer-term approach may gain insight into how using TikTok or other social media at different times of the day (i.e., in the morning versus at night) may result in unique physiological responses. It may also be of interest to use additional metrics beyond the PHQ-9 (depression) and GAD-7 (anxiety) scales such as the Bergen Social Media Addiction Scale to quantify the relationship between TikTok use, addiction, and HRV. Additionally, HRV analysis may be a useful, non-invasive metric for studies investigating biofeedback techniques for improving physical and mental health.

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Appendix

Appendix A Recruitment Materials

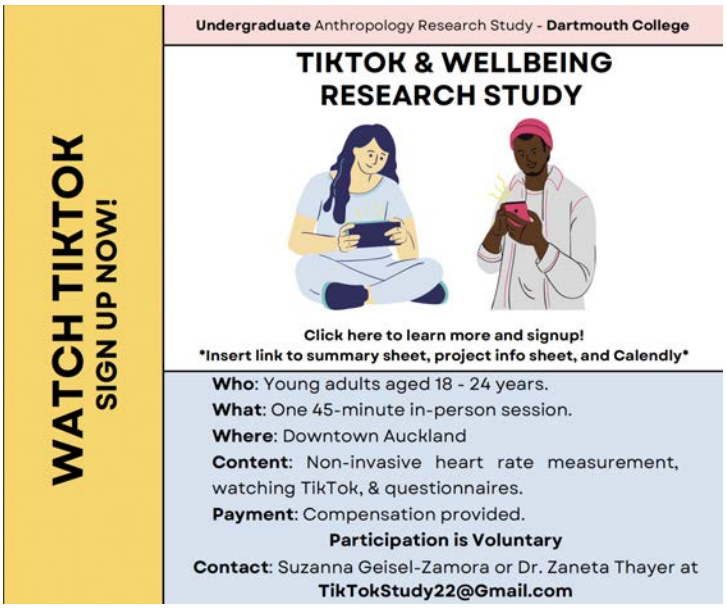

Figure A.1 Social media recruitment flyer posted on Facebook and Reddit.

Figure A.2 Print out recruitment flyer.

Appendix B Survey Materials

Table B.1 Demographic survey questions

Q1 Thank you for joining the TikTok and Wellbeing Research Study! You will now answer questions about your demographics, basic medical information, and social media use. Please ask the researcher any questions that may arise as you respond to the questions. None of your responses will be evaluated in real-time and will not be at all connected to any identifying information. You may choose to not answer some or all questions.
Q2 What is your age in years?
Q3 What is your race/ethnicity? Check all that apply: European/Pākehā Māori Asian Pacific Peoples Middle Eastern Latin American African Other
Q4 If other, define:
Q5 What is your main or preferred ethnic group?
Q6 What is your sex? Male Female
Q7 What is your gender identity? Male Female Gender non-conforming Non-binary/Gender queer Other Prefer not to say
Q8 If other, define:
Q9 Imagine that this ladder pictures how New Zealand society is set up. At the top of the ladder (10) are the people who are the best off — they have the most money, the highest amount of schooling, and the jobs that bring the most respect. At the bottom (1) are people who are the worst off — they have the least money, little or no education, no job, or jobs that no one wants or respects. Now think about your family.

Please tell us where you think your family would be on this ladder.

Mark the rung that best represents where your family would be on this ladder.

1
2
3
4
5
6
7
8
9
10

Q10 What is your current occupation?

Full-time university student
Part-time university student
Employed full-time
Employed part-time
Trade/technical/vocational training
Unemployed looking for work
Unemployed not looking for work

Q11 If you are a full-time or part-time student:
Assume that the ladder is a way of picturing your school. At the top of the ladder (10) are the people in your school with the most respect, the highest grades, and the highest standing. At the bottom (1) are the people whom no one respects, no one wants to hang around with, and have the worst grades.

Where would you place yourself on this ladder?

Mark the rung that best represents where you would be on this ladder.

1
2
3
4
5
6
7
8
9
10

Q12 What is your height? (cm)

Q13 What is your weight? (kg)

Q14 Do you have any known/diagnosed heart conditions?

Yes
No

Q15 Do you take medication for your heart condition?

Yes
No

Q16 Do you have any known/diagnosed lung conditions?

Yes
No

Q17 Do you take medication for your lung condition?

Yes
No

Q18 Do you have any diagnosed mental health conditions?

Yes

No

Q19 Do you take medication for your mental health condition?
Yes
No

Q20 Do you smoke and/or vape tobacco products?
Yes
Sometimes
No

Q21 How would you rate your current physical health?
Poor
Fair
Good
Excellent

Q22 Over the last two weeks, how often have you been bothered by the following problems?

	Not at all	Several Days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge	O	O	O	O
Not being able to stop or control worrying	O	O	O	O
Worrying too much about different thing	O	O	O	O
Trouble relaxing	O	O	O	O
Being so restless that it is hard to sit still	O	O	O	O

Becoming easily annoyed or irritable	O	O	O	O
Feeling afraid as if something awful might happen	O	O	O	O

Q23 Over the last two weeks, how often have you been bothered by the following problems?

	Not at all	Several Days	More than half the days	Nearly every day
Little interest or pleasure in doing things?	O	O	O	O
Feeling down, depressed, or hopeless?	O	O	O	O
Trouble falling or staying asleep, or sleeping too much?	O	O	O	O
Feeling tired or having little energy?	O	O	O	O
Poor appetite or overeating?	O	O	O	O
Feeling bad about yourself — or that you are a failure or have let yourself or your family down?	O	O	O	O

Trouble concentrating on things, such as reading the newspaper or watching television?	o	o	o	o
Moving or speaking so slowly that other people could have noticed? Or so fidgety or restless that you have been moving a lot more than usual?	o	o	o	o

Q24 Which social media platforms have you used at least once in the past 14 days?
Check all the apply:
- Facebook/Meta
- Instagram
- Snapchat
- TikTok
- Twitter
- Other

Q25 If other, define:

Q26 Rank the frequency of your use of the listed social media platforms
- Facebook/Meta
- Instagram
- Snapchat
- TikTok
- Twitter
- Other

Q27 Why is your most used social media platform your most used?

Q28 When did you start using TikTok?
- First half of 2019
- Second half of 2019
- First half of 2020
- Second half of 2020
- First half of 2021

Second half of 2021
First half of 2022

Q29 I use TikTok for...
Check all that apply:
- Entertainment
- To stay connected with friends and family
- To connect with new people
- Current events/News
- Education
- Other

Q30 If other, define:

Q31 I use TikTok...
Check all that apply:
- When I wake up
- Before I go to sleep
- During my free time
- At work/school
- Other

Q32 If other, define:

Q33 How well do you think the TikTok algorithm works in providing you content you are interested in?
- Poor
- Fair
- Neutral
- Good
- Excellent
- Not sure

Q34 Thinking about how you use TikTok, how often do you…

	Never (have never done this when using TikTok)	Rarely (have done this at least once when using TikTok)	Sometimes (have done some of this when using TikTok)	Most of the time (frequently do this when using TikTok)	Always (have done this almost every time when using TikTok)
Like and/or comment on videos	O	O	O	O	O

Send and/or receive videos (text message, TikTok direct message, etc)	O	O	O	O	O
Watch videos to completion	O	O	O	O	O
Create and post video content	O	O	O	O	O

Q35 Do you have post notifications turned on for TikTok?
- Yes
- No

Q36 How many minutes per day do you think you use TikTok?

Q37 Do you limit your phone screen time (whether through actual screen time limits set through your phone or based on personal judgment)?
- Yes
- No

Q38 If yes, why?

Q39 On a daily basis, how often do you see Aotearoa New Zealand-specific TikTok content?
- Never
- Sometimes
- About half the time
- Most of the time
- Always

Q40 On a daily basis, how often do you see Māori cultural TikTok content (Te Reo Māori, educational, lifestyle, art, etc.)?
- Never
- Sometimes
- About half the time
- Most of the time
- Always

Table B.2 Viewing responses questionnaire.
This set of questions was answered twice by each participant to account for their reactions to both TikTok viewing sessions.

Q1 During the first/second viewing session...
Q2 I saw content that is representative of what I normally see: Yes No
Q3 My overall feelings in response to the videos were: Very negative Negative Neutral Positive Very positive
Q4 Please elaborate on how you felt while watching the videos:
Q5 At times I felt stressed by the content I saw: Yes No
Q6 If yes, why?
Q7 At times I felt an emotional response (positive or negative) to the content I saw: Yes No
Q8 If yes, please explain the type of emotional response and what may have caused it:
Q9 I skipped past videos I found uninteresting or boring: Yes No
Q10 I skipped past videos I found stressful or distressing: Yes No
Q11 What are other reasons you may have skipped past videos or not watched them all the way through?
Q12 Overall, during the first/second viewing session I enjoyed the content I viewed: Yes

Mixed No