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Dating App Facilitated Sexual Violence: The Prevalence and Mental Health Effects

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DATING APP FACILITATED SEXUAL VIOLENCE: THE PREVALENCE
AND MENTAL HEALTH EFFECTS

by

SAMANTHA G. ECHEVARRIA

A thesis submitted in partial fulfillment of the requirements
for the Honors Interdisciplinary Thesis Program in Sociology
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ABSTRACT

Dating apps are in growing popularity, with 48% of dating app users in the United States being adults under 30 (Pew Research Center, 2020, Figure 5). While dating apps can provide a faster and easier way to meet or message a potential partner, they are also a relatively new platform to experience sexual violence. This thesis aims to explore the frequency of sexual violence experienced via dating apps as well as the specific effects this subtype of sexual violence has on the mental health of college students. Technology facilitated sexual violence (TFSV) includes unwanted sexual advances, sexual harassment, gender/sexuality-based abuse, sexual coercion, and rape that a person may experience due to technology that connected the victim to the perpetrator (Henry & Powell, 2018). While there is limited research on the physical and mental health effects of TFSV, past research includes all forms of technology. By focusing on dating apps, a widely used online platform, this research hopes to fill a gap in the research. The study conducted was of 230 college students at the University of Central Florida. Of all study participants, 144 reported current or past use of dating apps, and 88.8% of users reported at least one instance of sexual violence via dating apps. Overall, greater frequency of TFSV on dating apps was associated with more symptoms of depression, anxiety, PTSD, greater loneliness, less perceived self-control, and lower self-esteem.

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INTRODUCTION

Dating apps are an extremely common way of meeting sex and dating partners in college, especially since they function to connect you with people near your location. In 2019, research showed that 48% of Americans under 30 have used dating apps and 35% of Americans under 30 using dating apps have attended college (Anderson et al., 2020). Dating apps can provide a relatively easy and new way of meeting strangers. As a relatively new and increasingly normative mode of forming social connection, dating apps also create a new way of experiencing sexual violence (Anderson et al., 2020). With added anonymity of users, lack of user background checks, and easily accessible online profiles, dating apps can be unwittingly dangerous platforms (Choi et al., 2018). While different research studies have assessed a range of prevalence of technology facilitated sexual violence, among young adults, the research is minimal and includes all forms of technology (e.g., email, social media, online gaming, chat rooms).

Sexual violence includes the sexual harassment, sexual solicitation, sexual assault, or rape of another person. Technology facilitated sexual violence (TFSV) includes many of the same behaviors as offline sexual violence as well as non-contact sexual harassment. The main difference between TFSV and offline sexual violence is that the victim was found or reached via an online platform (Henry & Powell, 2018). Additionally, there is limited research on the mental health consequences of sexual violence specific to dating apps. Sexual violence is known to cause severe mental health effects on victims, negatively impacting their wellbeing, social relationships, and stress levels; however, sexual violence on dating apps has been underexplored (Snaychuk & O'Neill, 2020). Increased awareness is especially necessary with the current increase of dating app popularity; since the COVID-19 pandemic began, there has been an

increase in dating app use (Meisenzahl, 2020). With increased awareness of sexual violence via dating apps, mental health service providers can have better mental health screenings, programs, and outreach available to victims.

The purpose of the current research is to assess the mental health consequences of sexual violence, experienced specifically through dating apps, among undergraduate students at the University of Central Florida (UCF). The aim of this study is to evaluate the frequency of sexual violence that college students experience through dating apps as well as the associations between these experiences and mental health symptoms. More specifically, the study compares the mental health effects of dating app facilitated sexual violence with offline sexual violence of college students in terms of PTSD, depression, anxiety, self-esteem, loneliness, and perceived self-control symptomology. Based on previous research findings on technology-facilitated sexual violence, it is expected that college students who have experienced sexual violence on dating apps will have higher levels of PTSD, depression, and anxiety symptoms (Cripps, 2019). Self-esteem, loneliness, and perceived self-control have not yet been studied, to my knowledge, in regard to dating app facilitated sexual violence. Regarding PTSD symptoms, I hypothesize college students experiencing sexual violence via dating apps will have similar levels of PTSD symptoms as those who experience sexual violence offline/outside of dating apps. Additionally, I hypothesize that students who experienced sexual violence both outside of dating apps and via dating apps will have more negative mental health symptoms than students who experienced sexual violence only outside of dating apps. While dating apps are becoming more popular in recent years, the dangers associated with sexual violence via dating apps warrant further attention. Based on a Pew Research study, 46% of American adults feel dating apps are not a safe platform for meeting others. The same survey found that 27% of men and 48% of women

reported negative interactions on dating apps, with women ages 18-34 having the highest instances of harassment (Anderson et.al., 2020).

CHAPTER 1: LITERATURE REVIEW

Dating App Use in Recent Years

With the growth of technology and social media, dating and relationships are also moving online. Dating websites first became popular in the mid 1990s and early 2000s with services like Match.com, eHarmony, and Plenty of Fish (Rosenfeld & Thomas, 2012). These dating services have become increasingly accessible through apps on phones or tablets. Most apps used by adults under 30 focus on users' pictures and their proximity to dating app matches (Sumter & Vandenberg, 2018). Some of the most popular dating apps used by undergraduate college students include Tinder, Bumble, Hinge, and Grindr. As of 2019, Tinder had 7.86 million users, Bumble had 5.02 million users, Hinge had 1.21 million users, and Grindr had 1.64 million users (Verto Analytics, 2019, Figure 4). Tinder ranks at number 1 for most popular dating app, with 15% of U.S adults under 30 years old currently using Tinder (Morning Consult, 2020, Figure 3). Bumble ranks at number 2 for most popular dating app, with 13% of U.S adults under 30 years old currently using Bumble (Morning Consult, 2020, Figure 2). Today, there are frequent references to dating apps in media, television, movies, and music. Meeting partners via dating apps has become extremely normative. Since 2019, 12% of U.S. adults are currently in a committed relationship or in a marriage with a partner they met through a dating app (Anderson et.al., 2020). Match Group is a tech company that now owns over 40 dating websites and dating apps, with data and revenue showing an increased use of dating services. The last largest spike in dating app registration occurred during the COVID-19 quarantine period. From March to August 2020, there was about a 15% increase in subscribers to Match Group's services (Meisenzahl, 2020). The global pandemic limited physical interaction, leading to an increase in dating app downloads, subscriptions, and daily messages (Kats, 2020). These increased downloads, due to

COVID-19, may present larger numbers of college students using dating apps. With more college students on dating apps, a possible increase in dating app facilitated sexual violence could be seen, since the 18-24-year-old age group has the highest prevalence of general technology facilitated sexual violence (Powell & Henry, 2019).

While dating apps can be used by all people over the age of 18, adults under 30 make up 48% of users across online dating apps (Pew Research Center, 2020, Figure 5). Dating apps are also extremely popular for finding potential partners near one's location (Albury & Byron, 2016). Hookup culture has become increasingly prevalent with the increased use of dating apps and is most common among undergraduate students (Beauchamp et al., 2017). Hookup culture can be defined as finding sexual or romantic partners, frequently and for a short period of time, with no commitment (Beauchamp et al., 2017). Sexual violence, hookup culture, and consent have been points of worry mainly for undergraduate women registered on dating apps. In a study of undergraduate women and dating app experiences, most participants stated that they signed up on dating apps for entertainment and casual dating (Beauchamp et al., 2017). In that study, the most important concern women had was user safety when meeting someone from a dating app; consequently, most women would alert friends or meet in public spaces to feel safer (Beauchamp et al., 2017). While women may have been the focus of prior research, the current study focuses on all dating app users, currently attending college, to assess the prevalence and consequences of dating app facilitated sexual violence.

People of all genders, races, and sexual orientations use dating apps. Recent studies have shown that more dating app users are men, with 32% of male adults having used or currently using dating apps compared to 23% of female adults (Morning Consult, 2020, Figure 1). However, while sexual violence is prevalent among members of all groups, certain minorities

including women and members of the LGBTQ+ community are at higher risk for sexual violence in general. In a 2017 study, 83.67% of women met at least once with another dating app user in person, and women's highest concerns were about safety and authenticity on dating apps (Beauchamp et al., 2017). A study found that females in their adolescence and young adulthood reported more than twice as much online sexual solicitation as their male counterparts. Additionally, for participants in late adolescence to early adulthood, female participants perceived more risks and less benefits to online sexual behavior than their male counterparts (Baumgartner et al., 2010). Social media use, in conjunction with dating app messaging, is a popular way for users to protect themselves. The use of dating apps continues to provide access for new relationships, so undergraduate women tend to search or message their dating app matches on Facebook, Instagram, or Snapchat prior to physical contact as a measure of safety (Beauchamp et al., 2017).

Sexual minorities are also disproportionately affected by dating app facilitated sexual violence. Some dating apps, such as Grindr, specifically connect partners of the LGBTQ+ community. For LGBTQ+ young adults, hookup culture is also popular, and these dating apps offer geo-locations to connect app users in the area. Study participants that use LGBTQ+ dating apps, stated that their geo-location was a risk factor for them because it made them visible in their area even if they were not "out" (Albury & Byron, 2016). Additional concerns by LGBTQ+ users were sexual predators on the apps and the sharing of pictures on the app, while essential for trust, risked their identity (Albury & Byron, 2016). Overall, dating app use is extremely common among all young adults, but they continue to bring up user safety concerns and show that women and sexual minority groups may be at a higher risk for negative sexual encounters.

Technology Facilitated Sexual Violence

Technology facilitated sexual violence (TFSV) encompasses sexual harassment, sexual abuse, gender or sexuality-based harassment, sexual solicitation, sexual coercion, and rape experienced on or via online platforms. The current research study is focused on dating app facilitated sexual violence, a subset of TFSV, yet most research has evaluated the prevalence and health effects of the broader TFSV. Research on TFSV report experiences through social media platforms, dating apps/websites, chatrooms, email, gaming platforms, and cell phones. Sexual harassment via technology can range from unwanted sexual images or messages, distribution of sexual information about someone, threats to release someone's sexual images, insults or threats about someone's sexuality or gender identity, and physical sexual assault facilitated by an online platform.

Nonconsensual sexting or unauthorized distribution of sexual images and videos creates humiliation and harm to the victim. Therefore, researchers raised awareness by labeling actions, such as the unauthorized sharing of a sexual image that was only sent consensually to the original recipient, as sexual harassment (Powell, 2010). As noted by a TFSV literature review, studies on the nonconsensual distribution of sexually explicit images have not gone in depth about the mental health consequences or personal impacts this incident causes victims (Henry & Powell, 2018). Additionally, some laws may not provide protection to victims of harassment or violence caused by "sexting." However, studies found that threats and blackmail regarding the distribution of sexual images is common in domestic abuse (Henry & Powell, 2015). The aftermath of nonconsensual distribution of "sexts" includes harm to a victim's reputation, their mental health, and their emotional well-being.

In regard to measuring TFSV, Australian researchers Anastasia Powell and Nicola Henry published the Technology Facilitated Sexual Violence Victimization (TFSV-V) scale (Powell & Henry, 2019). The TFSV-V is a 21-item measure asking about specific sexual violence experiences. Some of the behaviors captured by measures of TFSV include unwanted messages, calls, pictures, or texts regarding sexual behavior, the nonconsensual distribution of sexually explicit photos, sexual aggression, sexual coercion, blackmail for sexual acts, and harassment that targets a person's sexual identity or orientation (Powell & Henry, 2019).

The possible sexual violence that is experienced offline and experienced via online platforms are not mutually exclusive. Since online platforms can facilitate an offline interaction with a perpetrator, TFSV also includes sexual offline behaviors. While an overlap between TFSV and offline sexual violence exists, there are also many behaviors specific to TFSV. According to a TFSV study, females report higher rates of sexual violence online by male perpetrators, males are more likely to report image-based and sexuality-based sexual harassment, and the 18-24-year-old age group have higher reports of TFSV than any other age group (Powell & Henry, 2019). In a separate study, 88% of females and 74.3% of males reported at least one incident of TFSV (Snaychuk & O'Neill, 2020). Researchers in Hong Kong found that dating app users could be at an increased risk for sexual coercion. Reasons for this correlation include that relationships made via dating apps may carry the expectation of sexual activity, and that dating app relationships develop quickly, leading to an increased vulnerability to sexual abuse (Choi et al., 2018). A Canadian study also found that undergraduate women, who experienced TFSV, had above average levels of PTSD, depression, and anxiety symptoms. This sample of women also felt unsafe and uncomfortable using technology on campus after they experienced technology facilitated sexual violence (Cripps, 2019).

How Online Forums Affect Mental Health

Any online platform, messaging site, and social media network can create social distress by connecting victims to aggressors (Flynn et al., 2019). Online platforms provide anonymity and technological barriers in catching or stopping aggressors. According to an online victimization study, most participants experienced defamation, outing, impersonation, sexual harassment, and cyberstalking at some point in their life. In this study, 68.3% of participants, most of which were female, reported online sexual harassment. Serious online victimization, especially defamation, was linked to higher levels of distress, neuroticism, and stress in daily life (Staude-Muller et al., 2012).

Cyberbullying and cyberstalking have also been a point of concern for online users' mental health. While most cyberbullying and cyberstalking in research is non-sexual, the aspects of new technology used to hurt or harass are also used in technology facilitated sexual violence. For example, the threats, harassment, and photo/video distribution perpetrated against cyberbullying and TFSV victims are available to more people, distributed faster, and have a longer permanence. One study found that online users with low self-esteem have higher rates of cyberbullying victimization (Brewer & Kerslake, 2015). Different studies on cyberbullying victimization also linked online victimization to increased loneliness, low self-esteem, anxiety, paranoia, and depression (Cowie, 2013). While more research has been conducted on cyberbullying, cyber victimization of a sexual nature also falls under TFSV and is common and detrimental.

TFSV has been shown to be associated with long term symptoms of PTSD and affect victims' self-esteem and mental health (Snaychuk & O'Neill, 2020). While there is growing research about the mental health effects of general TFSV victimization, we have yet to

understand how dating apps specifically contribute to TFSV. One study found that 20% of college males perpetrated some form of online sexual harassment or sexual solicitation (Thompson and Morrison, 2013). The expansion of online platforms means online victims are more vulnerable than ever, and research on the effects of technology facilitated sexual violence require more attention.

Technology can also be used to control romantic and sexual partners. The increased everyday use of phones, emails, and social media can provide partners a constant line for verbal and emotional abuse. In a study conducted on technology and adolescent dating, 30 out of 56 participants provided proof of their partners emotional or verbal abuse (Burke & Martself, 2010). Cell phone use, location tracking apps, and social media has led to a normalized and excessive monitoring of intimate partners. The constant availability to verbal abuse and monitorization by an intimate partner, through technology, can lead to increased fear and anxiety.

Mental Health and Adult Sexual Violence

Adults' experiences of sexual violence (defined as offline sexual violence occurring after the age of 14) has lasting physical and mental health consequences. According to statistics by the Rape, Abuse, and Incest National Network (RAINN), there are over 400,000 victims of sexual violence every year. The Centers for Disease Control and Prevention found that 19.3% of women and 1.7% of men have been raped in their lifetime (Breiding, 2014). As previously mentioned, women are disproportionately affected by technology facilitated sexual violence. Yearly, offline sexual violence statistics also run higher for women. According to RAINN, 90% of rape victims are women, 1 in 6 American women are victims to completed or attempted sexual violence, and female college students are 3 times more likely to experience sexual violence compared to women of the same age not in college. Males are also at risk for sexual violence. RAINN's

statistics show that male college students face 5 times higher likelihood of sexual violence compared to their male counterparts outside of college. The CDC estimates that 27.3% of women and 10.8% of men will experience unwanted sexual contact in their life while 32.1% of women and 13.3% of men will face non-contact unwanted sexual experiences (Breiding, 2014).

The effects of sexual violence may occur soon after and/or persist months after the traumatic incident has occurred. Psychological symptoms are highest 2-3 weeks after the trauma and can persist for about 1 month while PTSD symptoms can last up to 1 year (Jina & Thompson, 2013). According to RAINN's website, the most common mental health concerns are PTSD symptoms as well as symptoms of depression, anxiety, and suicidal thoughts. Women have a 30-94% lifetime prevalence of PTSD due to sexual violence (Jina & Thompson, 2013). Self-blame and perceived self-control have also been studied in women who have experienced sexual violence. Women who are victims of sexual violence are found to have higher levels of behavioral self-blame, seen as a possible coping mechanism to explain their trauma (O'Neill & Kerig, 2000). Additionally, a study indicated that sexually abused women with higher levels of perceived self-control showed higher resilience to their trauma (O'Neill & Kerig, 2000). For young adults who have experienced TFSV, self-esteem and perceived self-control could be associated with depression and sexual violence victimization. Those who reported incidents of TFSV had lower self-esteem and higher depressive symptoms (Snaychuk & O'Neill, 2020). The mental health effects for victims who experienced sexual violence offline or online are equally as harmful and different diagnostic measures are not used.

Sexual violence is also associated with numerous mental health outcomes and health risk behaviors. For example, PTSD symptoms are most common and can lead to self-isolation, fear, recurring nightmares, and feelings of paranoia. Victims of sexual violence may also turn to drug

use, alcohol use, or isolation from friends and family after their trauma. The majority of victims of violent crimes have both relationship problems and problems at work or school following the incident (Langton & Truman, 2014).

Dating App User Safety

Most free dating apps that college students use lack user background checks and lack official identification of users. Match Group's dating platforms have had various users become victims to sexual violence and to sexual predators who registered on the apps. The company ensures that their dating apps ban and remove any registered sex offenders and sexual solicitation. However, sexual predators can still sign-up multiple times on the same app, using different photos and/or names. Recent media reports have cited that dating app victims of sexual violence, re-registered on the same or similar dating apps, and found their attackers under new names (Flynn et al., 2019). Thus, sexual predators and known attackers continue to find victims on the same platforms.

The difficulty in finding registered sex offenders or previous sexual attackers and keeping them off the apps poses a large risk to users. While users may be aware of some risks in meeting up with strangers, the risks of sexual violence on dating apps may be underestimated. Columbia Journalism Investigations (CJI) found a group of dating app users with higher rates of sexual violence than the general population. Experts noted CJI's findings and stated that dating platforms have a moral responsibility to protect their users (Flynn et al., 2019). Ultimately, while dating apps do pose a risk for sexual violence and may connect you with predators, you may argue that they are safer than solely dating offline. Dating apps can be useful in connecting you to more people than you would meet in your everyday life and it can give you more control with what information you share and who to block that information from. Additionally, ending an

uncomfortable online interaction can be easier than ending an uncomfortable in-person interaction. Dating app use will continue to be a common way of meeting new partners and has many benefits to users, but it is also extremely important for the growing population of users to be aware of the possibilities and risks for sexual violence via dating apps.

The importance of this research is to increase awareness of sexual violence occurring through dating apps and recognize that dating app facilitated sexual violence carries risks to mental health, usually only discussed in regard to offline sexual violence. Some negative sexual experiences on dating apps like receiving unwanted explicit photos or messages are highly prevalent (26%-56%), varying by gender and sexual orientation (Anderson et.al., 2020). In the Pew Research study, negative experiences ranged from physical threats to offensive verbal comments. When asked about sexually based negative interactions on dating sites, 46% of women reported negative interactions compared to 26% of men. Younger women experienced more negative interactions than older women. Additionally, 32% of heterosexual users and 57% of LGBTQ+ users reported receiving unwanted sexually explicit messages (Anderson et.al., 2020). Dating apps create an environment for non-contact sexual violence which could lead to symptoms of PTSD, depression, and/or anxiety similar to victims of offline sexual violence.

This research focuses on undergraduate college students, who are already at an increased risk of sexual violence. By determining the prevalence of dating app facilitated sexual violence, as well as the extent of its mental health consequences, users and mental health professionals can be better equipped. A study, of sexual harassment on a college campus, found 58.7% of students received unwanted pornography at least once, contributing to feelings of being in a hostile environment (Finn, 2004). Campus resources should provide more adequate support, awareness, and better information on dating app use. In a study of undergraduate women and dating app

experiences, 88.69% did not think their university provided adequate professional or peer-led resources to them to discuss their negative dating app experiences (Beauchamp et al., 2017). Users can and should be aware of the true and common dangers of dating apps as well as of potential attackers on these platforms. This research can provide a starting point for better dating app development, user safety, user awareness, and appropriate mental health resources for victims. Most importantly, research on dating app facilitated sexual violence gives proper validation and understanding of the sexual violence experienced as well as the victims' mental health standing.

CHAPTER 2: METHODS

Participants

Individuals were eligible to participate if they were UCF undergraduate students and were 18 years of age or older (See Table 1). All participants were recruited through SONA, for 1 research credit in their psychology class, during one semester of study. If instructors offered extra credit to students for participating in research, then instructors must have provided an alternate assignment of comparable time and effort for students who wished to earn extra credit, but who did not want to take part in the research.

This thesis is part of an ongoing project recruiting 500 undergraduate students. At the time of analysis, data were collected from 230 participants. Therefore, results below reflect the current sample, but data collection will continue until the target sample of 500 participants is obtained. Participants were 230 college students between the ages of 18 and 60 years ($M = 20.87$, $SD = 5.76$). In this study, 64.0% of participants identified as women, 35.5% identified as men, and 0.4% identified as gender-fluid. Participants' race/ethnicity was 62.6% White, 16.5% Black, 28.7% Hispanic/Latino, 8.3% Asian, 0.9% Pacific Islander, 0.4% Native American, and 1.3% Other. Participants were able to select multiple racial/ethnic identities such that percentages add up to over 100%. At the time of the study, the majority of participants were single (56.6%), the majority were heterosexual/straight (82.0%), and the majority were full-time students (89.1%).

Procedures

The dating app survey was hosted on Qualtrics and accessed through SONA, the UCF Psychology Department's research participation system, where participants were rewarded with 1 research credit. Participants were told that the survey would take approximately 45 minutes to complete. The data collected was quantitative data (See Table 2). Individuals were eligible to

participate regardless of whether or not they have ever used dating apps or have ever experienced any form of sexual violence. The data collected was analyzed for prevalence of dating app facilitated sexual violence, general sexual violence outside of dating apps, and patterns of mental health symptoms in each main group.

The survey included measures of participants' use of dating apps, sexual violence experienced on dating apps, general experiences of adult sexual violence, and multiple mental health symptoms (depression, anxiety, PTSD, self-esteem, loneliness, perceived self-control). College students who reported no use of dating apps answered questions about general experiences of sexual violence, PTSD symptoms (for participants who report any form of sexual violence), and measures for symptoms of depression, anxiety, self-esteem, loneliness, and perceived self-control within the last month. College students who have used dating apps also answered questions reporting the frequency of sexual violence via dating apps and symptoms of PTSD related to any sexual violence experienced.

The self-report survey included 8 demographic questions, 17 questions about general dating app use, 28 questions about dating app facilitated sexual violence (for dating app users only), 18 questions about general adult sexual violence, 25 questions about PTSD symptoms for those who experienced sexual violence, 9 questions about depression symptoms, 7 questions about anxiety symptoms, 10 questions about self-esteem, 20 questions about loneliness, and 7 questions about perceived self-control (See Appendix). In order to ensure that participants were paying attention and reading the questions carefully, attention check questions were scattered throughout the survey. To ensure the safety and well-being of study participants, a list of mental health and sexual violence resources was included at the beginning and end of the survey (See

Appendix L). If any participant felt uncomfortable or retraumatized taking the survey, counseling centers and 24-hour hotlines were listed to connect them with professionals.

Measures

Demographics

Participants first answered basic demographic questions and general dating app use questions. Demographic questions were non-identifying and cannot be used to track the survey answers back to a participant's identity (See Appendix C). Demographic questions included the participant's year at UCF, enrollment status, age, race/ethnicity, gender, sexual orientation, and relationship status (See Table 1).

Dating App Use

For dating app users ($N = 144$), questions about age preference, gender preference, frequency of dating app use, and length of dating app use were asked. Additional questions focused on a participant's interactions with others on dating apps. For example, questions included if a participant ever felt uncomfortable interacting, felt unsafe messaging, or felt unsafe meeting others from a dating app (See Table 2). Specific questions also targeted participants' expectations and attitudes of sexual harassment and unwanted sexual advances on dating apps. These questions were used to assess participants preferences, reasons for dating app use, dating app expectations, and their general experiences (See Appendix C).

Sexual Violence

In order to accurately collect data and experiences of adult sexual violence, two separate measures were used. The Technology Facilitated Sexual Violence Victimization (TFSV-V) scale was used as a foundation to measure the prevalence and subtypes of sexual violence experienced through dating apps (Powell & Henry, 2019). From the TFSV-V scale, 4 original questions,

regarding virtual world and gaming platforms, were removed for the purposes of this dating app study. Also, 10 new questions, developed for this specific survey, were added about sexual violence experiences more specific to dating apps (See Appendix D). The TFSV-V scale measured experiences of sexual violence specifically occurring via dating apps, with items organized into four subsections: digital sexual harassment ($\alpha=0.788$), image-based sexual abuse ($\alpha=0.682$), sexual aggression and/or coercion ($\alpha=0.863$), and gender/sexuality-based harassment ($\alpha=0.766$). Higher scores indicate higher frequency of dating app facilitated sexual violence ($\alpha=0.904$). For this study, the TFSV-V scale was changed from a yes/no response system to a 0-3+ frequency response, to be consistent with the Sexual Experiences Survey- Short Form Victimization scale that was included to measure adult experiences of sexual violence (See Appendix E). Items were averaged to form scores for each subscale and the total TFSV-V score.

The Sexual Experiences Survey-Short Form Victimization (SES-SFV) scale was included in the survey to measure the prevalence of sexual violence victimization, from the age of 14 to the present time (Koss et. al., 2006). The SES-SFV scale was adapted to be specific to sexual violence experienced in person or online apart from dating apps. Participants were instructed to respond to these questions based on their experiences, apart from dating apps, since the age of 14 to present time (See Appendix E). Participants also answered the SES-SFV questions, on a 0-3+ frequency scale, based on the number of times each event had occurred ($\alpha=0.887$).

Mental Health Symptoms

All mental health measures, apart from the PTSD measure, were answered by all participants regardless of whether or not they used dating apps. The PTSD measure was only answered by participants who reported sexual violence experience(s). Additionally, participants

answered all mental health measures based on their mental health symptoms within the last month.

Post-Traumatic Stress Disorder (PTSD)

Participants who answered yes to having reported at least 1 instance of sexual violence, on dating apps or outside of dating apps, are directed to the PDS-5 scale (See Appendix F). The PDS-5 scale is a 22-item measure to gauge the extent of post-traumatic stress disorder symptoms (Foa et.al., 2016). PTSD symptoms can range from feeling upset or having nightmares due to the trauma to adverse physical symptoms. Participants were asked to respond based on how many days per week the symptoms have occurred in the last month. The more days in a week a symptom occurs, the more severe their PTSD is. Additionally, participants were asked how long after the trauma their symptoms began as well as how long the symptoms persisted. Participants who did not report any sexual violence on dating apps or outside of dating apps were directed to only answer the rest of the mental health measures. They did not answer the PDS-5 scale because the PTSD measure is specifically used in reference to reported sexual violence experiences. Answers to each item were averaged, higher scores on this measure reflect more severe PTSD symptomology ($\alpha=0.971$).

Depression

The PHQ-9 scale is the measure used to gauge participants level of depressive symptoms in this survey (See Appendix G). The PHQ-9 scale is a 9-item measure that includes questions about a person's daily physical and emotional behavior within the last month (Kroenke et.al., 2001). Participants were asked to respond based on how many days per week (not sure, several days, over half the days, nearly every day) each symptom occurred. Participants who had reported sexual violence, offline or on dating apps, answered the PHQ-9 questions after having

answered sexual violence and PTSD questions. Participants who reported never having used dating apps were directly taken to this section of the survey and only answered the mental health measures. All 9 items assessing depression symptoms in this measure were averaged with higher scores indicating more severe depression symptoms ($\alpha=0.903$).

Anxiety

In order to gauge if and how severe anxiety symptoms appear, the GAD-7 scale was used (See Appendix H). The GAD-7 scale is a short 7-item measure regarding various behaviors and feelings someone has felt within the last month (Spitzer et.al, 2006). Participants were also asked to respond based on how many days per week (not sure, several days, over half the days, nearly every day) each symptom occurred. Scoring was done by averaging the answers of all items, and higher scores indicate more severe anxiety symptoms ($\alpha=0.937$).

Self-Esteem

The Rosenberg Self-Esteem scale is a 10-item measure used in this survey to gauge participants' level of self-esteem (Rosenberg, 1965) (See Appendix I). This measure includes both positive and negative statements to which a participant responded on a 1-4 scale labeled strongly agree, agree, disagree, or strongly disagree. Negatively worded items were reverse coded, and scoring was done by averaging items in the measure. Higher scores indicate higher self-esteem ($\alpha=0.919$).

Loneliness

Participants answered various questions to gauge their level of loneliness within the past month (See Appendix J). The UCLA Loneliness scale is a 20-item measure used in this survey about one's personal feelings and social perceptions (Russell, 19961996). Participants were asked to respond with how often they relate to each item (often, sometimes, rarely, never).

Scoring was done by averaging all items in the measure. All items in the measure were reverse coded, so higher scores indicate more loneliness ($\alpha=0.964$).

Perceived Self-control

The Pearlin Self-Mastery scale was used in this survey to assess participant's level of perceived self-control (Pearlin & Schooler, 1978). The scale is a 7-item measure including questions about feelings of helplessness, one's control over life problems, control over one's future, and confidence (See Appendix K). Participants were asked to respond based on the extent they agreed with each item (Strongly agree, agree, somewhat agree, neither agree nor disagree, somewhat disagree, disagree, strongly disagree). Scoring was done by averaging all items in the measure, and higher scores indicate higher perceived self-control ($\alpha=0.805$).

CHAPTER 3: RESULTS

Dating App Use Experiences and Expectations

Of the total ($N = 230$) participants, 144 (62.6%) participants reported they currently use or have used dating apps, and 85 (37.0%) participants reported never using dating apps. One additional participant had missing data for the full survey. Of the 144 participants who are using or have used dating apps, 141 (98.0%) participants have messaged someone else on a dating app, and 103 (71.5%) participants have met someone in person from a dating app. When asked yes/no questions about their personal dating app experiences, 59% of users have felt uncomfortable interacting with someone on a dating app, 28.5% have felt unsafe when messaging someone from a dating app, and 20.1% have felt unsafe when meeting someone from a dating app. Dating app users were asked about their expectations when signing up on dating apps where 58% expected something bad or uncomfortable to occur, 39.6% expected some form of sexual harassment, and 91% think unwanted sexual advances are common on dating apps. When asked how appropriate they think unwanted sexual advances are on dating apps, 59.7% of dating app users think it is not appropriate at all, 29.2% think it is slightly appropriate, 8.3% think it is moderately appropriate, and 2.8% think it is always appropriate for dating apps.

Sexual Violence and How It Was Experienced

Participants who reported current or past use of dating apps ($n = 144$) were directed to answer the TFSV-V scale items. This scale is used to record how many times a participant experienced specific sexually violent behaviors via dating apps. Including all items in the TFSV-V scale, 88.8% of dating app users reported yes for at least one item. The full TFSV-V scale is also divided into four sections; first, the digital sexual harassment section contains items about unwanted sexual behavior experienced by electronic means, and the image-based sexual abuse

section contains items about receiving nonconsensual sexually explicit images. Third, the sexual aggression and coercion section contains items about becoming a sexual assault victim via online platforms as well as items about blackmail or distribution of someone's sexually explicit images. Finally, the gender/sexuality-based sexual harassment section contains items about receiving unwanted hate or comments about gender or sexual orientation. For each section of the scale, 88.1% of dating app users reported digital sexual harassment, 37.8% reported image-based sexual abuse, 42.0% reported sexual aggression/coercion, and 49.7% reported gender/sexuality-based sexual harassment.

The study also found differences in the frequency of dating app facilitated sexual violence based on participants' gender and sexuality. Women ($M = 1.613$, $SD = 0.508$) experienced dating app facilitated sexual violence more frequently than men ($M = 1.227$, $SD = 0.237$). The overall model was significant $F(1,140) = 27.835$, $p < 0.001$. The average frequency of dating app facilitated sexual violence was higher in all four sections for women compared to the average frequency reported by men. Based on gender, digital sexual harassment had the largest difference in average frequency of dating app facilitated sexual violence. The frequency of digital sexual harassment for women ($M = 1.976$, $SD = 0.654$) was higher compared to the frequency for men ($M = 1.420$, $SD = 0.384$). The overall model was significant $F(1,140) = 32.557$, $p < .001$.

Additionally, participants who identified as a sexual minority ($M = 1.630$, $SD = 0.567$) experienced dating app facilitated sexual harassment more frequently than heterosexual/straight participants ($M = 1.413$, $SD = 0.420$). The overall model was significant $F(1,140) = 5.611$, $p = .019$. The average frequency of dating app facilitated sexual violence was higher in all four sections for sexual minorities when compared to the average frequency reported by heterosexual/straight participants. Based on sexuality, digital sexual harassment was the section

with the largest difference in average frequency of dating app facilitated sexual violence. The frequency of digital sexual harassment for sexual minorities ($M = 2.031$, $SD = 0.719$) was higher compared to the frequency for heterosexual/straight participants ($M = 1.676$, $SD = 0.576$). The overall model was significant $F(1,140) = 8.417$, $p = .004$.

All participants, who have used dating apps or not, were directed to answer the SES-SFV scale. This measure was used to record sexual violence that occurred, after the age of 14, apart from dating apps. 36.7% of participants reported at least one instance of adult sexual violence outside of dating apps using behaviorally specific language. Additionally, when participants were explicitly asked in a follow-up question if they had been raped, 8.0% reported yes.

Of all participants who reported at least one incident of sexual violence, via dating apps and/or outside of dating apps, ($n = 107$) answered the PTSD measure. Some participants who previously reported at least 1 instance of sexual violence in the TFSV-V scale or the SES-SFV scale reported they had not done so in a follow-up question. Their answer to this follow-up question could have been a mistake, misinterpretation of the question, or another unknown reason, but their answer inhibited their access to the PTSD measure. Of the 107 participants who completed the PTSD measure, after reporting sexual violence, only 101 participants explicitly reported how they experienced their trauma. Of the 101 participants, 9 (8.9%) experienced sexual violence only via dating apps, 52 (51.5%) experienced sexual violence outside of dating apps, and 40 (39.6%) experienced sexual violence both on and off dating apps. The sample size for participants who experienced sexual violence only via dating apps is too small to make significant statistical comparisons between the other two groups. Means and standard deviations of each mental health measure score separated by how sexual violence was experienced (i.e., via dating apps only, outside of dating apps, vs. both) is reported in Table 4.

Dating App Facilitated Sexual Violence and Mental Health

Participants who reported current or past use of dating apps responded the technology facilitated sexual violence victimization (TFSV-V) scale and multiple mental health measures. The total score of the TFSV-V scale relates the frequency of sexual violence experienced on dating apps. The data results showed that TFSV specific to dating apps was a significant predictor of mental health symptoms for PTSD, depression, anxiety, self-esteem, loneliness, and perceived self-control (See Table 3).

Sexual Violence on Dating Apps and PTSD

A linear regression analysis was conducted with dating app facilitated sexual violence frequency predicting symptoms of PTSD. The overall model was significant, $F(1, 78) = 31.308$, $p < .001$, $R^2 = 28.6\%$. Therefore, TFSV specific to dating apps was a significant predictor of PTSD symptoms, $B(SE) = 1.011 (0.181)$, $t(78) = 5.595$, $p < .001$, indicating that the greater frequency of TFSV on dating apps was associated with more severe symptoms of PTSD.

Sexual Violence on Dating Apps and Depression

A linear regression analysis was conducted with dating app facilitated sexual violence frequency predicting symptoms of depression. The overall model was significant, $F(1, 141) = 7.608$, $p = .007$, $R^2 = 5.1\%$. Therefore, TFSV specific to dating apps was a significant predictor of depression symptoms, $B(SE) = 0.347 (0.126)$, $t(141) = 2.758$, $p = .007$, indicating that the greater frequency of TFSV on dating apps was associated with more symptoms of depression.

Sexual Violence on Dating Apps and Anxiety

A linear regression analysis was conducted with dating app facilitated sexual violence frequency predicting symptoms of anxiety. The overall model was significant, $F(1, 141) = 15.260$, $p < .001$, $R^2 = 9.8\%$. Therefore, TFSV specific to dating apps was a significant predictor

of anxiety symptoms, $B(SE) = 0.585 (0.150)$, $t(141) = 3.906$, $p < 0.001$, indicating that a greater frequency of TFSV on dating apps was associated with more symptoms of anxiety.

Sexual Violence on Dating Apps and Self-Esteem

A linear regression analysis was conducted with dating app facilitated sexual violence frequency predicting levels of self-esteem. The overall model was significant, $F(1, 140) = 8.830$, $p = .003$, $R^2 = 5.9\%$. Therefore, TFSV specific to dating apps was a significant predictor of self-esteem levels, $B(SE) = -0.308 (0.104)$, $t(140) = 2.972$, $p = .003$, indicating that a greater frequency of TFSV on dating apps was associated with lower self-esteem.

Sexual Violence on Dating Apps and Loneliness

A linear regression analysis was conducted with dating app facilitated sexual violence frequency predicting loneliness. The overall model was significant, $F(1, 140) = 5.636$, $p = .019$, $R^2 = 3.9\%$. Therefore, TFSV specific to dating apps was a significant predictor of loneliness, $B(SE) = 0.340 (0.143)$, $t(140) = 2.374$, $p = .019$, indicating that a greater frequency of TFSV on dating apps was associated with greater loneliness.

Sexual Violence on Dating Apps and Perceived Self-Control

A linear regression analysis was conducted with dating app facilitated sexual violence frequency predicting participant's perceived self-control. The overall model was significant, $F(1, 140) = 10.509$, $p = .001$, $R^2 = 7.0\%$. Therefore, TFSV specific to dating apps was a significant predictor of perceived self-control, $B(SE) = -0.628 (0.194)$, $t(140) = -3.242$, $p = .001$, indicating that the greater frequency of TFSV on dating apps was associated with participants having less perceived self-control.

CHAPTER 4: DISCUSSION

The purpose of this research study was to assess the frequency of dating app facilitated sexual violence among college students at the University of Central Florida. Additionally, the study aimed to investigate the mental health patterns as a consequence of experiencing sexual violence on dating apps. The results of this research study found that a majority of college students are currently using or have used dating apps. Of the dating app users, an overwhelming majority (88.8%) have experienced at least one TFSV behavior, at least one time, on dating apps. Within the four subsections of the TFSV-V scale, digital sexual harassment items were, on average, most highly reported while sexual aggression/coercion items were, on average, the least reported. The most frequently experienced item within digital sexual harassment was receiving unwanted sexually explicit images, comments, or messages on dating apps. This is consistent with previous research stating that a majority of college students received unwanted pornographic content (Finn, 2004). The item with the highest average score within image-based sexual abuse was being coerced into sending nude or semi-nude images to someone from a dating app. The item with the highest average score within sexual aggression/coercion was someone from a dating app showing their private body parts without consent. Finally, the item with the highest average score within the gender/sexuality-based sexual harassment section was receiving gender-based offensive and/or degrading messages, comments, or content from someone via a dating app.

Additionally, there were significant findings within the study about the frequency of dating app facilitated sexual violence based on gender and sexuality. Based on gender, this study found that the frequency of dating app facilitated sexual violence was higher for women than for men. This finding is consistent with previous research stating that women report more negative

dating app interactions (Anderson et.al., 2020). Of all four TFSV-V scale sections, frequency of digital sexual harassment had the largest average difference between men and women. This study also found that participants who identify as a sexual minority reported a higher average frequency of dating app facilitated sexual violence when compared to heterosexual/straight participants. This is consistent with previous research stating members of the LGBTQ+ community report more TFSV (Anderson et.al., 2020). Of the four TFSV-V scale subsections, the frequency of experiencing digital sexual harassment had the largest average difference between heterosexual and sexual minority participants.

Participants in the study were also asked to report what sexual violence they experienced outside of dating apps since the age of 14 and how many times it happened. The frequency of general adult sexual violence outside of dating apps was much lower (36.7%) than on dating apps. This is very close to previous research that reported 27.3% of women and 10.8% of men experience unwanted sexual contact in their lifetime (Breiding, 2014).

Regarding the six mental health measures included in the study, symptomology for all six were significantly correlated to the frequency of dating app facilitated sexual violence. Increased frequency of dating app facilitated sexual violence was a significant predictor for increased symptoms of PTSD, increased symptoms of depression, increased symptoms of anxiety, lower self-esteem, increased loneliness, and decreased perceived self-control. These findings are consistent with the hypothesis made that people who experience dating app facilitated sexual violence would have higher levels of PTSD, depression, and anxiety symptoms. These findings are also consistent with previous research regarding TFSV causing increased symptoms of depression, anxiety, PTSD, and lower self-esteem (Snaychuk & O'Neill, 2020). There was no previous known research found on TFSV and its effects on loneliness or perceived self-control to

compare with this study. Of all mental health measures, increased frequency of dating app facilitated sexual violence had the highest correlation with PTSD symptoms.

The next hypothesis made in this study was that people who experience sexual violence both via dating apps and outside of dating apps will have more negative mental health effects than people who have only experienced sexual violence outside of dating apps. Based on the study results, participants who reported sexual violence both on dating apps and outside dating apps had almost the same average scores for depression, PTSD, self-esteem, and loneliness, and lower average scores for anxiety and perceived self-control than participants who only reported sexual violence outside of dating apps. However, there is not enough statistical power in this subsample of participants to assess whether or not these groups differ statistically on these mental health outcomes. The final hypothesis was that participants who experienced sexual violence only via dating apps would have similar total scores for PTSD as those who experienced sexual violence outside of dating apps. The sample size of students experiencing sexual violence only via dating apps was too small in this study to assess statistical significance. All in all, this study provides support for the idea that dating app facilitated sexual violence is a significant predictor of increased negative mental health symptoms.

CHAPTER 5: STRENGTHS, LIMITATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

A strength of this research survey is the thoroughness of questions regarding various forms of sexual violence. Items within each measure targeted online and offline behaviors that affect a victim's physical, emotional, and societal life. Many items asked for specific experiences, which an everyday person may not recognize as sexual harassment, so they can be answered without the pressure of a label or social connotation. Participants were not only asked about their sexual violence experiences in detail but were also asked about their general experiences and expectations while using dating apps. Questions regarding their views on dating apps, their expectations about sexual harassment prior to using dating apps, and their views on what behavior is appropriate on dating apps were asked. These responses allow for more insight on the topic of technology facilitated sexual violence. The various mental health measures also included a wider range of symptoms and indicators. Many studies focus on depression and anxiety, but this study also included questions about PTSD, self-esteem, loneliness, and perceived self-control which can all provide insight on participants' mental health. Additionally, this study was able to be taken by participants online, thus participants could choose any time or location and have privacy to report or think about the difficult trauma surrounding sexual violence and mental health.

On the other hand, a weakness in this research is that some mental health questions may cause biased underreporting. Another weakness of this research study is how sensitive or taboo sexual violence can be. While participants are allowed to skip questions, exit the survey, and take the survey in private, some participants may feel uncomfortable answering questions about

traumatic sexual experiences or feel uncomfortable if their experiences have never been previously shared. The disclosure of sensitive information, even when anonymous, may lead to participants underreporting incidents of sexual violence for personal or emotional reasons. Finally, this research assesses the effects of mental health at various and unknown times from the date of the trauma. Therefore, the level and frequency of certain symptoms regarding PTSD, anxiety, depression, loneliness, and self-esteem are only known at the time the study was taken. A longitudinal study is important in future research to have a more thorough understanding of the immediate and long term-effects for each mental health measure. In this survey, most participants who experienced sexual violence via dating apps also experienced offline sexual violence. The individual impact for each trauma is difficult to separate and analyze, so longitudinal research may be able to find their differential impact if participant's mental health is studied before and after sexually violent experiences.

Implications for Future Research

Future research on the frequency and mental health effects of dating app facilitated sexual violence is necessary for all current and future victims. Dating app use is growing considerably and becoming a more normative way of meeting partners or forming relationships. Therefore, future research can raise awareness of the frequency of sexual violence via dating apps as well as the mental health effects and even physical effects. Many people may not think of sexual violence experienced online as being as impactful, hurtful, or traumatizing, but this research shows that the effects of dating app facilitated sexual violence are important. Increased awareness and understanding can allow for better care and support among members of society toward victims of dating app facilitated sexual violence. Additionally, officially labeling specific

actions like the sending of unsolicited sexual images (which is commonly reported on dating apps) as sexual violence, can help reduce its normalization.

On a medical and clinical perspective, future research can outline the immediate and long-term health effects of sexual violence experienced via dating apps. This can allow for better health care and prepare mental health providers to start specific treatment plans or techniques when patients report such experiences. By knowing the health effects of TFSV, health providers can be better equipped to help/treat victims who report those behaviors.

CHAPTER 6: CONCLUSION

This study found that dating app facilitated sexual violence is extremely frequent among college students, with digital sexual harassment being reported by a large majority of dating app users. Receiving sexually explicit images, comments, messages, nude images, or semi-nude images without the recipient's consent was the highest reported. Most importantly, the study found statistically significant correlations between the frequency of dating app facilitated sexual violence and negative mental health symptoms. Increased experiences of TFSV on dating apps can cause increased symptoms of depression, anxiety, PTSD, greater loneliness, lower self-esteem, and decreased perceived self-control. Future research should focus on how negative and unwanted sexual experiences on dating apps affects young adults' mental health in the short-term and in the long-term. This research study aims to raise awareness of sexual violence on dating apps, a growing social platform, and note its effects so that better care and support may be available to all victims.

APPENDIX A: RESEARCH STUDY TABLES

Table 1. Demographic Information ($N = 230$)

	$M (Sd)$	$N (%)$
Age	20.87 (5.78)	
Gender Identity		
Woman		146 (64.0%)
Man		81 (35.5%)
Gender-fluid		1 (0.4%)
Race/Ethnicity		
White		144 (62.8%)
Black		38 (16.6%)
Hispanic/Latino		66 (28.8%)
Asian		19 (8.3%)
Pacific Islander		2 (0.9%)
Native American		1 (0.4%)
Other		3 (1.3%)
Enrollment		
Full-time student		204 (89.1%)
Part-time student		25 (10.9%)
Enrollment Year		
Freshman		114 (49.8%)
Sophomore		52 (22.7%)
Junior		34 (14.8%)
Senior		22 (9.6%)

Not sure	7 (3.1%)
Sexual Orientation	
Heterosexual or straight	187 (82.0%)
Homosexual, gay, or lesbian	8 (3.5%)
Bi-sexual	25 (11.0%)
Pansexual	3 (1.3%)
Asexual	3 (1.3%)
Other	2 (0.9%)
Relationship Status	
Single	129 (56.6%)
Casually dating	22 (9.6%)
In committed or exclusive relationship(s)	71 (31.1%)
Engaged	1 (0.4%)
Married or common-law	5 (2.2%)

Table 2. Participants' Dating App Use Information (*N* = 144)

	N (%)
What dating app(s) have you used?	
Tinder	129 (89.6%)
Bumble	80 (55.6%)
Hinge	31 (21.5%)
Grindr	5 (3.5%)
Other	17 (11.8%)
How long did you use or have been using dating apps?	
Less than a week	14 (9.7%)
A couple weeks	32 (22.2%)
A couple months	57 (39.6%)
A year	19 (13.2%)
Over a year	22 (15.3%)
Frequency at which you open/use dating apps?	
Every day	47 (32.6%)
Couple times a week	57 (39.6%)
Couple times a month	20 (13.9%)
Less than once a month	20 (13.9%)
Purpose for signing up/using dating apps?	
To find friends	57 (39.6%)
To find a casual relationship	84 (58.3%)
To find a long-term relationship	75 (52.1%)

Casual dating	78 (54.2%)
Sex	46 (31.9%)
Other	6 (4.2%)
Who do you look for on dating apps?	
Men	67 (46.5%)
Women	52 (36.1%)
Both	25 (17.4%)
Have you ever exchanged messages with someone on a dating app?	
Yes	141 (97.9%)
No	3 (2.1%)
Have you ever met up in person with someone on a dating app?	
Yes	103 (71.5%)
No	41 (28.5%)
Have you ever felt uncomfortable messaging or interacting with someone on a dating app?	
Yes	85 (59.0%)
No	57 (39.6%)
Never messaged someone	2 (1.4%)
Have you ever felt unsafe when messaging someone on a dating app?	
Yes	41 (28.5%)
No	102 (70.8%)
Never messaged someone	1 (0.7%)

Have you ever felt unsafe when meeting someone on a dating app?

Yes	29 (20.1%)
No	81 (56.3%)
Never met someone from a dating app	34 (23.6%)

Did you expect something bad or uncomfortable could occur when signing up on a dating app?

Yes	83 (58.0%)
No	60 (42.0%)

Did you expect to experience sexual harassment when signing up on a dating app?

Yes	57 (39.6%)
No	87 (60.4%)

Do you think unwanted sexual advances are common on dating apps?

Yes	131 (91.0%)
No	13 (9.0%)

How appropriate do you think unwanted sexual advances are on dating apps?

Not appropriate at all	86 (59.7%)
Slightly appropriate	42 (29.2%)
Moderately appropriate	12 (8.3%)
Very appropriate	0 (0.0%)
Always appropriate	4 (2.8%)

Do your friends think unwanted sexual advances are common on dating apps?

Yes	126 (88.1%)
No	17 (11.9%)

How appropriate do your friends think unwanted sexual advances are on dating apps?

Not appropriate at all	77 (53.8%)
Slightly appropriate	38 (26.6%)
Moderately appropriate	21 (14.7%)
Very appropriate	5 (3.5%)
Always appropriate	2 (1.4%)

Table 3. Bivariate Correlations and Descriptive Statistics ($N = 230$)

	TFSV on Dating Apps	SES-SFV	Depression	Anxiety	PTSD	Self-Esteem	Loneliness	Perceived Self-Control
1. TFSV on Dating Apps	-							
2. SES-SFV	0.722**	-						
3. Depression	0.226**	0.390**	-					
4. Anxiety	0.313**	0.394**	0.782**	-				
5. PTSD	0.535**	0.610**	0.705**	0.618**	-			
6. Self-Esteem	-0.244**	-0.229**	-0.617**	-0.516**	-0.411**	-		
7. Loneliness	0.197*	0.209**	0.575**	0.475**	0.459**	-0.654**	-	
8. Perceived Self-Control	-0.264**	-0.197**	-0.542**	-0.446**	-0.364**	0.749**	-0.660**	-
Mean	1.461	1.250	1.717	1.877	1.745	1.981	2.063	5.049
Sd	0.462	0.530	0.686	0.849	0.915	0.623	0.799	1.110

Note. * $p < .05$, ** $p < .01$

Table 4. Mental Health Scores Based on How Sexual Violence Occurred ($N = 101$)

	<i>M</i>	<i>SD</i>
Depression		
via Dating Apps Only	1.30	0.85
Outside of Dating Apps	1.94	0.83
Both	1.89	0.73
Anxiety		
Via Dating Apps Only	1.71	1.07
Outside of Dating Apps	2.22	0.97
Both	1.96	0.90
PTSD		
Via Dating Apps Only	1.35	0.64
Outside of Dating Apps	1.81	0.95
Both	1.86	0.93
Self-Esteem		
Via Dating Apps Only	2.02	0.68
Outside of Dating Apps	2.12	0.70
Both	2.13	0.60
Loneliness		
Via Dating Apps Only	2.14	0.77
Outside of Dating Apps	2.27	0.76
Both	2.23	0.78
Perceived Self-Control		
Via Dating Apps Only	5.22	1.03
Outside of Dating Apps	4.89	1.24
Both	4.68	1.12

APPENDIX B: DATING APP USE FIGURES

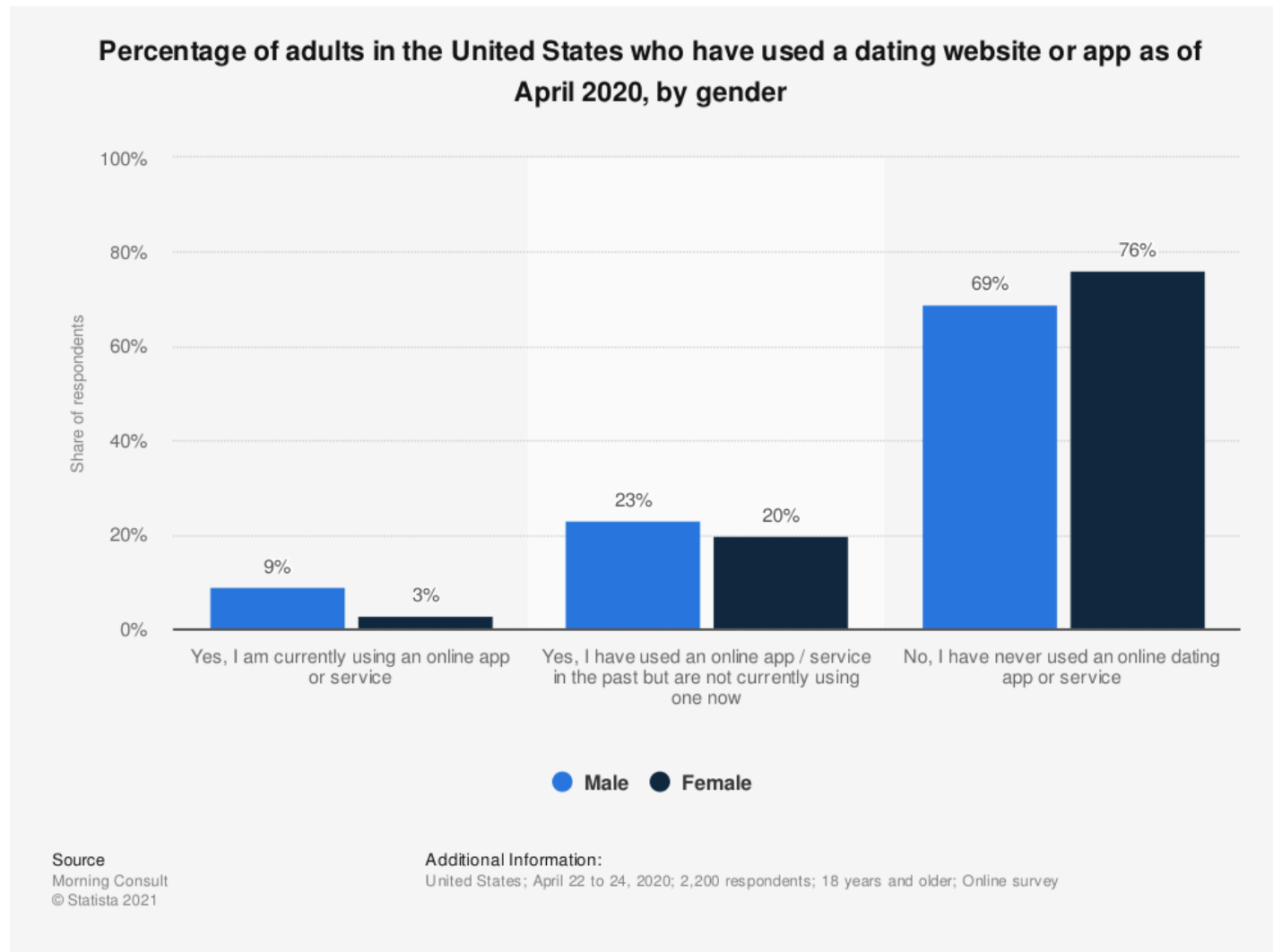


Figure 1: Percentage of Adults in the United States Who Have Used a Dating Website or App as of April 2020, By Gender

Source: Morning Consult

<https://www.statista.com/statistics/310335/us-online-dating-app-site-usage-gender/>

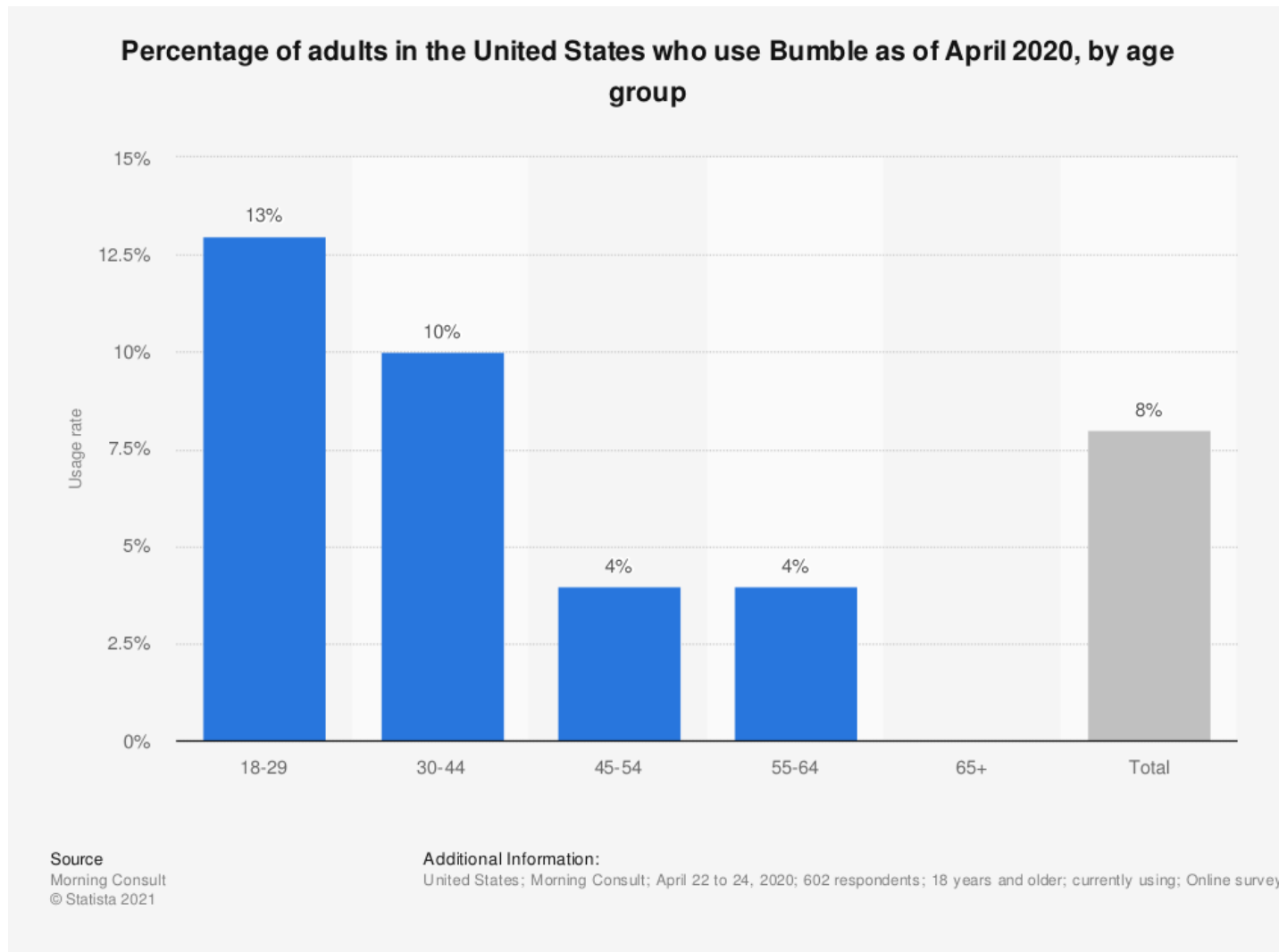


Figure 2: Percentage of Adults in the United States Who Use Bumble as of April 2020, By Age Group

Source: Morning Consult

<https://www.statista.com/statistics/1114026/share-of-us-internet-users-who-use-bumble-by-age/>

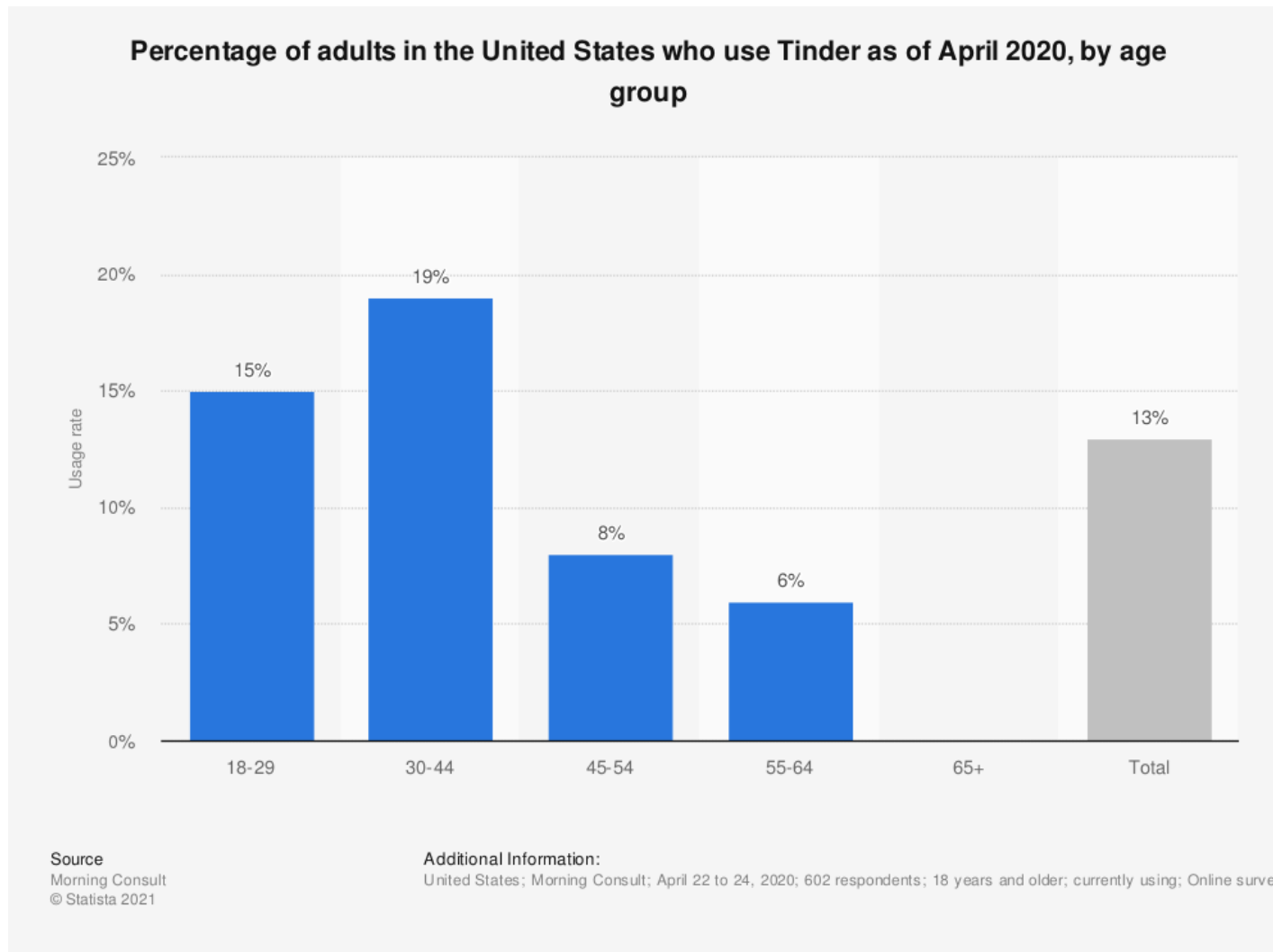


Figure 3: Percentage of Adults in the United States Who Use Tinder as of April 2020, By Age Group

Source: Morning Consult

<https://www.statista.com/statistics/814698/share-of-us-internet-users-who-use-tinder-by-age/>

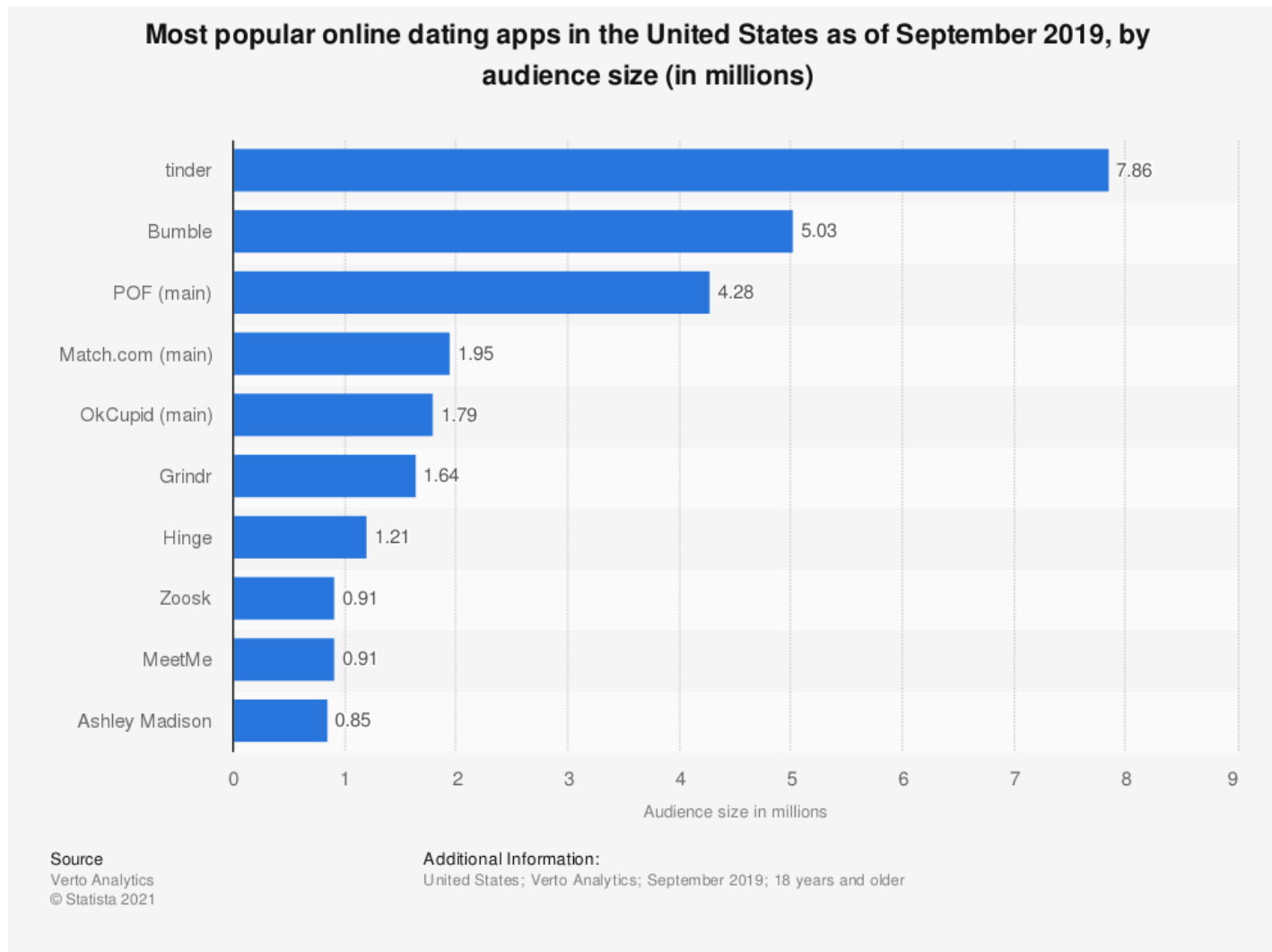


Figure 4: Most Popular Online Dating Apps in the United States as of September 2019, By Audience Size
Source: Verto Analytics
<https://www.statista.com/statistics/826778/most-popular-dating-apps-by-audience-size-usa/>

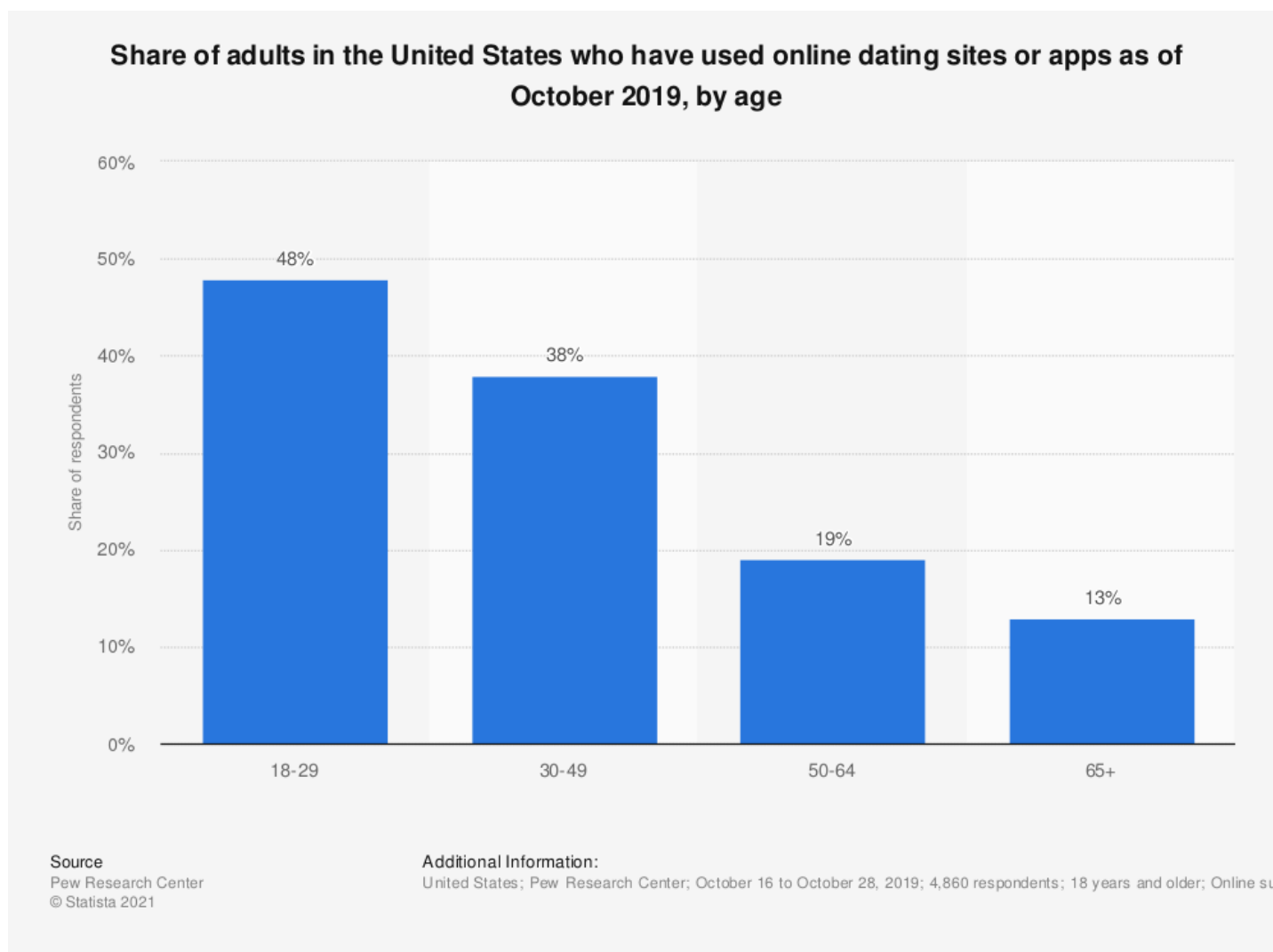


Figure 5: Share of Adults in the United States Who Have Used Online Dating Sites or Apps as of October 2019, By Age

Source: Pew Research Center

<https://www.statista.com/statistics/309461/us-adults-online-dating-site-usage-age/>

APPENDIX C: DEMOGRAPHIC QUESTIONS

1. Are you enrolled as a full-time or part-time student?
 - a. Full-time student
 - b. Part-time student
2. What year are you currently in at UCF?
 - a. Freshman year
 - b. Sophomore year
 - c. Junior Year
 - d. Senior Year
 - e. I'm not sure
3. What is your age?
_____ (drop down list)
4. What race/ethnicity do you identify as? You may choose more than one.
 - a. White
 - b. Black
 - c. Hispanic/Latino
 - d. Asian
 - e. Pacific Islander
 - f. Native American
 - g. Other (please specify): _____
5. What is your gender?
 - a. Man
 - b. Woman
 - c. Transgender woman
 - d. Transgender man
 - e. Gender-fluid
 - f. Non-binary
 - g. Other (please specify): _____
6. How do you describe your sexual orientation?
 - a. Heterosexual or straight
 - b. Homosexual, gay, or lesbian
 - c. Bi-sexual
 - d. Pansexual
 - e. Asexual
 - f. Other (please specify): _____
7. What is your current relationship status?
 - a. Single
 - b. Casually dating
 - c. In committed or exclusive relationship(s)

- d. Engaged
 - e. Married or common-law
8. Have you used any dating app(s) while in college? (ex. Tinder, Grindr, Bumble, Hinge, etc.)
- a. Yes, currently using
 - b. Yes, have used before but not currently using
 - c. No
9. What dating app(s) have you used or are currently using? Check all that apply.
- a. Tinder
 - b. Bumble
 - c. Hinge
 - d. Grindr
 - e. Other (please specify): _____
10. How long did you use or have been using dating apps?
- a. Less than a week
 - b. A couple weeks
 - c. A couple months
 - d. A year
 - e. Over a year
11. What is the frequency at which you open/use these dating apps?
- a. Every day
 - b. Couple times a week
 - c. Couple times a month
 - d. Less than once a month
12. For what purpose did you decide to sign up/use dating apps? You can choose more than one.
- a. To find friends
 - b. To find a casual relationship
 - c. To find a long-term relationship
 - d. Casual dating
 - e. Sex
 - f. Other (please specify): _____
13. Who do you look for on dating apps?
- a. Men
 - b. Women
 - c. Both
14. What age range do you look for on dating apps?
- AGE MIN: _____ AGE MAX: _____

15. Have you ever exchanged messages with anyone through a dating app?
- Yes
 - No
16. Have you ever met up in person with someone from a dating app?
- Yes
 - No
17. Have you ever felt uncomfortable messaging or interacting with someone from a dating app?
- Yes
 - No
 - Never messaged someone from a dating app
18. Have you ever felt unsafe when messaging someone from a dating app?
- Yes
 - No
 - Never messaged someone from a dating app
19. Have you ever felt unsafe when meeting someone from a dating app?
- Yes
 - No
 - Never met someone from a dating app
20. Did you expect something bad or uncomfortable could occur when signing up on a dating app?
- Yes
 - No
21. This is an attention check question. Please answer no for this question.
- Yes
 - No
22. Did you expect to experience sexual harassment when signing up on a dating app?
Sexual harassment includes unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature in the workplace or learning environment, according to the U.S Equal Employment Opportunity Commission.
- Yes
 - No
23. Do you think unwanted sexual advances are common on dating apps?
Unwanted sexual advances are actions such as comments, messages, photos, calls, touches, pressure for dates, pressure for sexual favors, sexual innuendos, or sexual stories with the aim being sex that the person subjected deems unwelcome.

- a. Yes
 - b. No
24. How appropriate do you think unwanted sexual advances are on dating apps (i.e. sexual comments, messages, sexual favors, sexual photos)?
- a. Not appropriate at all
 - b. Slightly appropriate for dating apps
 - c. Moderately appropriate for dating apps
 - d. Very appropriate for dating apps
 - e. Always appropriate for dating apps
25. Do your friends think unwanted sexual advances are common on dating apps (i.e. comments, messages, sexual favors, sexual photos)?
- a. Yes
 - b. No
26. How appropriate do your friends think these unwanted sexual advances are on dating apps (i.e. comments, messages, sexual favors, sexual photos)?
- a. Not appropriate at all
 - b. Slightly appropriate for dating apps
 - c. Moderately appropriate for dating apps
 - d. Very appropriate for dating apps
 - e. Always appropriate for dating apps

APPENDIX D: TECHNOLOGY FACILITATED SEXUAL VIOLENCE
MEASURE

Technology Facilitated Sexual Violence Victimization Scale

These next questions ask about experiences from the age of 14 to the present time that occurred between you and somebody that you met, matched with, messaged, or dated specifically via a dating app. Answer with the frequency that these incidents occurred.

Digital sexual harassment

1. How many times has someone ever sexually harassed you?
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
2. How many times have you received unwanted sexually explicit images, comments, emails, or text messages?
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
3. How many times has a partner checked up on your location or activities multiple times a day?
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
4. How many times have you received repeated and/or unwanted sexual requests or messages via a dating app?
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
5. How many times has a partner gained access to your emails or other online accounts without permission?
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
6. How many times has someone ever shown up to your home or place of work after meeting, messaging, or matching with you?
 - a. 0

- b. 1
 - c. 2
 - d. 3+
7. How many times have you received constant messages or calls from someone after rejecting them?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
8. How many times has someone publicly posted online an offensive sexual comment about you?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
9. How many times has someone posted personal details online saying you are available to have sex?
- a. 0
 - b. 1
 - c. 2
 - d. 3+

Image-based sexual abuse

10. How many times have you had a nude or semi-nude image taken without permission?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
11. How many times have you had a nude or semi-nude image posted online/sent onto others without permission?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
12. How many times have you had a nude or semi-nude image threatened to be posted online/sent onto others?
- a. 0
 - b. 1
 - c. 2

d. 3+

13. How many times has someone coerced you into sending nude or semi-nude images to them on a dating app?

- a. 0
- b. 1
- c. 2
- d. 3+

Sexual aggression and/or coercion

14. How many times have you had an image/video of an unwanted sexual experience taken?

- a. 0
- b. 1
- c. 2
- d. 3+

15. How many times have you had an image/video of an unwanted sexual experience posted online/sent onto others?

- a. 0
- b. 1
- c. 2
- d. 3+

16. How many times have you had an image/video of an unwanted sexual experience threatened to be posted online/sent onto others?

- a. 0
- b. 1
- c. 2
- d. 3+

17. This is an attention check question. Please answer 2 for this question.

- a. 0
- b. 1
- c. 2
- d. 3+

18. How many times have you had an unwanted sexual experience with someone you met on a dating site/app?

- a. 0
- b. 1
- c. 2
- d. 3+

19. How many times did someone you meet off a dating app physically coerce you into giving or receiving oral sex?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
20. How many times did someone you meet off a dating app pressure you or insist on you giving or receiving oral sex when you did not want to?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
21. How many times did someone you meet off a dating app touch you sexually without your explicit consent?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
22. How many times did someone you meet off a dating app refuse to stop a sexual act after you said stop or otherwise indicated that you did not want that sexual act?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
23. How many times did someone you meet off a dating app touch you sexually when you were too drunk or high to consent?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
24. How many times did someone you meet off a dating app show you their private body parts without your consent?
- a. 0
 - b. 1
 - c. 2
 - d. 3+

Gender/sexuality-based harassment

25. How many times have you received gender-based offensive and/or degrading messages, comments, or other content?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
26. How many times have you received sexuality or sexual identity-based offensive and/or degrading messages, comments, or other content?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
27. How many times have you received sexually violent threats?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
28. How many times has someone described or visually represented an unwanted sexual act against you using an online platform, email, or messages?
- a. 0
 - b. 1
 - c. 2
 - d. 3+
29. If you answered yes to any of these questions, how distressing did these incidents feel when they occurred?
- a. Not at all
 - b. Slightly distressing
 - c. Somewhat distressing
 - d. Extremely distressing

APPENDIX E: GENERAL SEXUAL VIOLENCE QUESTIONS

SES-V Short Form

The following questions are regarding any general sexual violence you may have experienced from the age of 14 to the present time. You may have experienced this in person or online apart from dating apps. Please answer with the frequency of which these events happened.

1. Someone fondled, kissed, or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (but did not attempt sexual penetration).
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
2. Someone had oral sex with me or made me have oral sex with them without my consent.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
3. A man put his penis into my vagina, or someone inserted fingers or objects into my vagina without my consent.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
4. A man put his penis into my butt, or someone inserted fingers or objects into my butt without my consent.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
5. Even though it didn't happen, someone TRIED to have oral sex with me, or make me have oral sex with them without my consent.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
6. Even though it didn't happen, a man TRIED to put his penis into my vagina, or someone TRIED to insert fingers or objects into my vagina without my consent.
 - a. 0
 - b. 1

- c. 2
 - d. 3+
7. Even though it didn't happen, a man TRIED to put his penis into my butt, or someone TRIED to insert fingers or objects into my butt without my consent.
- a. 0
 - b. 1
 - c. 2
 - d. 3+
8. Did any of the experiences described in this survey happen to you 1 or more times?
- a. Yes
 - b. No
9. What was the sex of the person or persons who did them to you?
- a. Female only
 - b. Male only
 - c. Both females and males
 - d. I reported no experiences
10. Have you ever been raped?
- a. Yes
 - b. No

The following are additional questions about sexual experiences which could have occurred in person or on online platforms, not including from dating apps. Answer with the frequency of which these incidents occurred.

1. Someone showed me their private body parts without my consent.
- a. 0
 - b. 1
 - c. 2
 - d. 3+
2. Someone sent nude or semi-nude pictures to me without my consent.
- a. 0
 - b. 1
 - c. 2
 - d. 3+
3. Someone tried to take nude or semi-nude pictures of me without my consent.
- a. 0
 - b. 1
 - c. 2
 - d. 3+

4. Someone tried to send others nude or semi-nude pictures of me without my consent.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
5. An image or video of me in an unwanted sexual experience was posted online/sent to others.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
6. Someone publicly posted an offensive sexual comment about me.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
7. I have received sexually violent threats and/or messages.
 - a. 0
 - b. 1
 - c. 2
 - d. 3+
8. Did any of the sexual experiences described in this survey or in the dating app survey happen to you at least 1 time?
 - a. Yes
 - b. No

APPENDIX F: POST-TRAUMATIC STRESS DISORDER MEASURE

PDS-5 Scale

Please read each statement carefully and choose what best describes how often that problem has been happening and how much it upset you, after any unwanted sexual experience(s) you reported above. Rate each problem based on your feelings in the last month.

1. Unwanted upsetting memories about the trauma
 - a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
2. Bad dreams or nightmares related to the trauma
 - a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
3. Reliving the traumatic event or feeling as if it were actually happening again
 - a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
4. Feeling very EMOTIONALLY upset when reminded of the trauma
 - a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
5. Having PHYSICAL reactions when reminded of the trauma (for example, sweating, heart racing)
 - a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
6. Trying to avoid thoughts or feelings related to the trauma
 - a. Not at all
 - b. A little/once a week or less

- c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
7. Trying to avoid activities, situations, or places that remind you of the trauma or that feel more dangerous since the trauma
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
8. Not being able to remember important parts of the trauma
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
9. Seeing yourself, others, or the world in a more negative way (for example, "I can't trust people," "I'm a weak person")
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
10. Blaming yourself or others (besides the person who hurt you) for what happened
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
11. Having intense negative feelings like fear, horror, anger, guilt or shame
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
12. Losing interest or not participating in activities you used to do
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week

- d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
13. Feeling distant or cut off from others
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
14. Having difficulty experiencing positive feelings
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
15. Acting more irritable or aggressive with others
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
16. Taking more risks or doing things that might cause you or others harm (for example, driving recklessly, taking drugs, having unprotected sex)
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
17. Being overly alert or on-guard (for example, checking to see who is around you, being uncomfortable with your back to a door)
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
18. Being jumpy or more easily startled (for example when someone walks up behind you)
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week

- e. Severe/6 or more times a week
19. Having trouble concentrating
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
20. Having trouble falling or staying asleep
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
21. How much have these difficulties been bothering you?
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
22. How much have these difficulties been interfering with your everyday life (for example relationships, work, or other important activities)?
- a. Not at all
 - b. A little/once a week or less
 - c. Somewhat/2-3 times a week
 - d. Very much/4-5 times a week
 - e. Severe/6 or more times a week
23. How long after the trauma did these difficulties begin? [circle one]
- a. Less than 6 months
 - b. More than 6 months
24. How long have you had these trauma-related difficulties? [circle one]
- a. Less than 1 month
 - b. More than 1 month
25. How did you experience the unwanted sexual incident(s)?
- a. Via dating apps only
 - b. Outside of dating apps
 - c. Both

APPENDIX G: DEPRESSION MEASURE

PHQ-9 Scale

Answer the following questions based on your feelings. How often have you been bothered by the following problems in the last month?

1. Little interest or pleasure in doing things?
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
2. Feeling down, depressed, or hopeless?
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
3. Trouble falling or staying asleep, or sleeping too much?
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
4. Feeling tired or having little energy?
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
5. Poor appetite or overeating?
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
6. This is an attention check question. Answer “several days” for this question.
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
7. Feeling bad about yourself - or that you are a failure or have let yourself or your family down?
 - a. Not sure
 - b. Several days

- c. Over half the days
 - d. Nearly every day
8. Trouble concentrating on things, such as reading the newspaper or watching television?
- a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
9. Moving or speaking so slowly that other people could have noticed? (Or the opposite)
Being so fidgety or restless that you have been moving around a lot more than usual?
- a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
10. Thoughts that you would be better off dead, or of hurting yourself in some way?
- a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day

APPENDIX H: ANXIETY MEASURE

GAD-7 Scale

Answer the following questions based on your feelings. How often have you been bothered by the following problems in the last month?

1. Feeling nervous, anxious, or on edge
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
2. Not being able to stop or control worrying
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
3. Worrying too much about different things
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
4. Trouble relaxing
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
5. Being so restless that it's hard to sit still
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
6. Becoming easily annoyed or irritable
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day
7. Feeling afraid as if something awful might happen
 - a. Not sure
 - b. Several days
 - c. Over half the days
 - d. Nearly every day

APPENDIX I: SELF-ESTEEM MEASURE

Rosenberg Self Esteem Scale

Answer based on your mental and emotional state in the last month.

1. On the whole, I am satisfied with myself.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
2. At times I think I am no good at all.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
3. I feel that I have a number of good qualities.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
4. I am able to do things as well as most other people.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
5. I feel I do not have much to be proud of.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
6. I certainly feel useless at times.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
7. I feel that I'm a person of worth, at least on an equal plane with others.
 - a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree

8. I wish I could have more respect for myself.
- a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
9. All in all, I am inclined to feel that I am a failure.
- a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree
10. I take a positive attitude toward myself.
- a. Strongly Agree
 - b. Agree
 - c. Disagree
 - d. Strongly Disagree

APPENDIX J: LONELINESS MEASURE

UCLA Loneliness Scale

Answer based on your mental and emotional state in the last month.

1. I am unhappy doing so many things alone
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
2. I have nobody to talk to
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
3. I cannot tolerate being so alone
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
4. I lack companionship
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
5. I feel as if nobody really understands me
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
6. I find myself waiting for people to call or write
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
7. There is no one I can turn to
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never

8. I am no longer close to anyone
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
9. My interests and ideas are not shared by those around me
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
10. I feel left out
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
11. I feel completely alone
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
12. I am unable to reach out and communicate with those around me
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
13. My social relationships are superficial
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
14. I feel starved for company
 - a. Often
 - b. Sometimes
 - c. Rarely
 - d. Never
15. No one really knows me well
 - a. Often
 - b. Sometimes

- c. Rarely
- d. Never

16. I feel isolated from others

- a. Often
- b. Sometimes
- c. Rarely
- d. Never

17. I am unhappy being so withdrawn

- a. Often
- b. Sometimes
- c. Rarely
- d. Never

18. It is difficult for me to make friends

- a. Often
- b. Sometimes
- c. Rarely
- d. Never

19. I feel shut out and excluded by others

- a. Often
- b. Sometimes
- c. Rarely
- d. Never

20. People are around me but not with me

- a. Often
- b. Sometimes
- c. Rarely
- d. Never

21. This is an attention check question. Answer often for this question.

- a. Often
- b. Sometimes
- c. Rarely
- d. Never

APPENDIX K: PERCEIVED SELF-CONTROL MEASURE

Pearlin Self-Mastery Scale

Answer based on your mental and emotional state in the last month.

1. There is really no way I can solve some of the problems I have.
 - a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree
 - e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree
2. Sometimes I feel that I'm being pushed around in life.
 - a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree
 - e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree
3. I have little control over the things that happen to me.
 - a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree
 - e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree
4. I can do just about anything I really set my mind to.
 - a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree
 - e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree
5. I often feel helpless in dealing with the problems of life.
 - a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree

- e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree
6. What happens to me in the future mostly depends on me.
- a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree
 - e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree
7. There is little I can do to change many of the important things in my life.
- a. Strongly agree
 - b. Agree
 - c. Somewhat Agree
 - d. Neither agree nor disagree
 - e. Somewhat disagree
 - f. Disagree
 - g. Strongly Disagree

APPENDIX L: MENTAL HEALTH RESOURCES PROVIDED

National Sexual Assault Hotline

Get Help 24/7

Call: 800-656-HOPE (4673)

Chat line: online.rainn.org

Website: <https://rainn.org>

General Crisis

Crisis Text Line: Text SUPPORT or HELLO to 741-741

<https://www.crisistextline.org>

The Crisis Text Line extends to everyone. Their goal "...is helping people move from a hot moment to a cool calm, guiding you to create a plan to stay safe and healthy. YOU = our priority." 24/7 help is available.

SAMHSA's National Helpline

(also known as the Treatment Referral Routing Service) is a confidential, free, 24-hour-a-day information service for individuals and family members facing mental and/or substance use problems.

Telephone: 1-800-662-HELP (4357)

Online Treatment Locator: <https://findtreatment.samhsa.gov/>

UCF Counseling and Psychological Services (CAPS)

Crisis Hotline: 407-823-2811

(Press #5 and you will be immediately connected to a licensed therapist)

Crisis Center: 407-425-2624

24-hour crisis hotline service available to students. Counselors who staff the hotline will help you manage a crisis situation

Website: <https://caps.sdes.ucf.edu>

Counseling and Psychological Services (CAPS) is a free-of-charge campus agency designated to provide culturally and trauma informed services to university-enrolled students.

UCF Victim Services

24/7 number: 407-823-1200

Website: <https://victimservices.ucf.edu/>

Victim Services provides confidential crisis intervention, options and advocacy to anyone impacted by crime, violence, or abuse. If you or someone you know has been impacted by crime, violence, or abuse, we can help.

APPENDIX M: IRB APPROVAL LETTER AND MODIFICATION



UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board

FWA00000351

IRB00001138, IRB00012110

Office of Research

12201 Research Parkway Orlando, FL 32826-3246

EXEMPTION DETERMINATION

December 2, 2020

Dear Jacqueline Woerner:

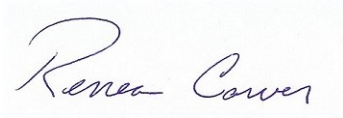
On 12/2/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study, Exempt 2(i)
Title:	Dating App Experiences and Health
Investigator:	Jacqueline Woerner
IRB ID:	STUDY00002527
Funding:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">Dating App Samantha HUT Survey updated 11-25-2020.docx, Category: Survey / Questionnaire;Samantha E HUT Project HRP-254-FORM_updated 12-2-2020.pdf, Category: Consent Form;Samantha HUT Project HRP-255-FORM_updated 11-25-2020.docx, Category: IRB Protocol;SONA Ad - Samantha E HUT - updated 11-25-2020.docx, Category: Recruitment Materials;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

A handwritten signature in dark ink, reading "Renea Carver". The signature is written in a cursive style with a large, looped "R" and a clear, legible "Carver".

Renea Carver
Designated Reviewer



UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board

FWA00000351

IRB00001138, IRB00012110

Office of Research

12201 Research Parkway Orlando, FL 32826-3246

EXEMPTION DETERMINATION

April 1, 2021

Dear Jacqueline Woerner:

On 4/1/2021, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Modification / Update
Title:	Dating App Experiences and Health
Investigator:	Jacqueline Woerner
IRB ID:	MOD00001761
Funding:	None
Grant ID:	None
Documents Reviewed:	• Samantha HUT Project HRP-255-FORM_updated 3-31-2021.docx, Category: IRB Protocol;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Racine Jacques, Ph.D.
Designated Reviewer

REFERENCES

- Albury, K., & Byron, P. (2016). Safe on My Phone? Same-Sex Attracted Young People's Negotiations of Intimacy, Visibility, and Risk on Digital Hook-Up Apps. *Social Media + Society*, 1-10. doi:10.1177/2056305116672887
- Anderson, M., Vogels E. A., Turner, E. (2020) The Virtues and Downsides of Online Dating. *Pew Research Center*, 1-52. Retrieved from <https://www.pewresearch.org/internet/2020/02/06/users-of-online-dating-platforms-experience-both-positive-and-negative-aspects-of-courtship-on-the-web/>.
- Baumgartner, S. E., Valkenburg, P. M., & Peter, J. (2010). Unwanted online sexual solicitation and risky sexual online behavior across the lifespan. *Journal of Applied Developmental Psychology*, 31, 439-447.
- Beauchamp, A., Cotton, H., LeClere, A., Reynolds, E., Riordan, S., & Sullivan, K. (2017). Super Likes and Right Swipes: How Undergraduate Women Experience Dating Apps. *Journal of the Student Personnel Association at Indiana University*, 1-16. Retrieved from <https://scholarworks.iu.edu/journals/index.php/jiuspa/article/view/23700>
- Breiding, Matthew J. (2014). Prevalence and Characteristics of Sexual Violence, Stalking, and Intimate Partner Violence Victimization - National Intimate Partner and Sexual Violence Survey, United States, 2011. *Centers for Disease Control and Prevention*. Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/ss6308a1.htm>.
- Brewer, G., & Kerslake, J. (2015). Cyberbullying, self-esteem, empathy and loneliness. *Computers in Human Behavior*, 48, 255-260. doi:10.1016/j.chb.2015.01.073
- Burke Draucker, C., & Martsolf, D. S. (2010). The Role of Electronic Communication Technology in Adolescent Dating Violence. *Journal of Child and Adolescent Psychiatric*

- Nursing*, 23(3), 133-142. doi: 10.1111/j.1744-6171.2010.00235.x
- Choi, EP. H., Wong, JY. H., & Fong, DY. T. (2018). An Emerging Risk Factor of Sexual Abuse: The Use of Smartphone Dating Applications. *Sexual Abuse: A Journal of Research and Treatment*, 30(4), 343-366. doi:10.1177/1079063216672168
- Cowie, H. (2013). Cyberbullying and its Impact on Young People's Emotional Health and Well-being. *The Psychiatrist*, 37, 167-170. doi:10.1192/pb.bp.112.040840
- Cripps, J. (2016). Forms of Technology-Facilitated Sexual Violence and University Women's Psychological Functioning (Unpublished Master's Thesis). University of Toronto.
- Finn, J. (2004). A Survey of Online Harassment at a University Campus. *Journal of Interpersonal Violence*, 19(4), 468-483. doi: 10.1177/0886260503262083.
- Flynn, H., Picciani, E. N., & Cousins, K. (2019, December 2). Tinder Lets Known Sex Offenders Use the App. It's Not the Only One. *Buzzfeed News*. Retrieved August 26, 2020, from <https://www.buzzfeednews.com/article/hillaryflynn/tinder-lets-known-sex-offenders-use-the-app-its-not-the>
- Foa, E. B., McLean, C. P., Zang, Y., Zhong, J., Powers, M. B., Kauffman, B. Y., ... Knowles, K. (2016). Psychometric properties of the Posttraumatic Diagnostic Scale for DSM-5 (PDS-5). *Psychological Assessment*, 28, 1166-1171. doi:10.1037/pas0000258
- Henry, N., & Powell, A. (2015). Beyond the 'sext': Technology- Facilitated Sexual Violence and Harassment Against Adult Women. *Australian and New Zealand Journal of Criminology*, 48(1), 104-118. doi:10.1177/0004865814524218
- Henry, N., & Powell, A. (2018). Technology-Facilitated Sexual Violence: A Literature Review of Empirical Research. *Trauma, Violence, & Abuse*, 19(2), 195-208. doi:10.1177/1524838016650189

- Jina, R., & Thompson, L. S. (2013). Health consequences of sexual violence against women. *Best Practice & Research Clinical Obstetrics and Gynaecology*, 27(1), 15-26.
- Kats, R. (2020, August 21). Love in the Time of the Coronavirus: Dating Apps Are Growing and Becoming More Virtual. Retrieved December 02, 2020, from <https://www.emarketer.com/content/love-time-of-coronavirus-dating-apps-growing-becoming-more-virtual?ga=2.141860528.307313689.1606859249-1434631929.1606859249>
- Koss, M.P. Abbey, A., Campbell, R., Cook, S., Norris, J., Testa, M., Ullman, S., West, C., & White, J. (2006). The Sexual Experiences Short Form Victimization (SES-SFV). Tucson, AZ: University of Arizona.
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of general internal medicine*, 16(9), 606–613. doi: 10.1046/j.1525-1497.2001. 016009606.x
- Langton, L., & Truman, J. L. (2014). Socio-emotional impact of violent crime. Washington, D.C.: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Meisenzahl, M. (2020, August 05). These charts from Match Group show more people are turning to online dating during the pandemic. Retrieved December 02, 2020, from <https://www.businessinsider.com/tinder-hinge-match-group-dating-apps-more-users-coronavirus-2020-8>
- Morning Consult. (2020). Percentage of adults in the United States who have used a dating website or app as of April 2020, by gender [Graph]. Retrieved from <https://www.statista.com/statistics/310335/us-online-dating-app-site-usage-gender/>.

Morning Consult. (2020). Percentage of adults in the United States who use Bumble as of April 2020, by age group [Graph]. Retrieved from <https://www.statista.com/statistics/1114026/share-of-us-internet-users-who-use-bumble-by-age/>

Morning Consult. (2020). Percentage of adults in the United States who use Tinder as of April 2020, by age group [Graph]. Retrieved from <https://www.statista.com/statistics/814698/share-of-us-internet-users-who-use-tinder-by-age/>.

O'Neill, M. L., & Kerig, P. K. (2000). Attributions of Self-Blame and Perceived Control as Moderators of Adjustment in Battered Women. *Journal of Interpersonal Violence*, 15(10), 1036-1049.

Pearlin, L. I., & Schooler, C. (1978). The Structure of Coping. *Journal of Health and Social Behavior*, 2-21.

Pew Research Center. (2020). Share of adults in the United States who have used online dating sites or apps as of October 2019, by age [Graph]. Retrieved from <https://www.statista.com/statistics/309461/us-adults-online-dating-site-usage-age/>

Powell, A. (2010). Configuring Consent: Emerging Technologies, Unauthorised Sexual Images and Sexual Assault. *The Australian and New Zealand Journal of Criminology*, 43(1), 76-90.

Powell, A., & Henry, N. (2019). Technology-Facilitated Sexual Violence Victimization: Results from an Online Survey of Australian Adults. *Journal of Interpersonal Violence*, 34(17), 3637-3665. doi:10.1177/0886260516672055

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton

University Press.

Rosenfeld, M. J., & Thomas, R. J. (2012). Searching for a mate. *American Sociological Review*, 77(4), 523-547. doi:10.1177/0003122412448050

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66(1), 20–40.

https://doi.org/10.1207/s15327752jpa6601_2

Snaychuk, L. A., & O'Neill, M. L. (2020). Technology-Facilitated Sexual Violence: Prevalence, Risk, and Resiliency in Undergraduate Students. *Journal of Aggression, Maltreatment and Trauma*, 29(8), 984-999. doi:10.1080/10926771.2019.1710636

Spitzer, R. L., Kroenke, K., Williams, J. B. W., Lowe, B. (2006). A brief measure for assessing generalized anxiety disorder. *Arch Intern Med*. 166(10), 1092-1097.

doi:10.1001/archinte.166.10.1092

Stade-Müller, F., Hansen, B., & Voss, M. (2012). How stressful is online victimization? Effects of victim's personality and properties of the incident. *European Journal of Developmental Psychology*, 9(2), 260-274. doi:10.1080/17405629.2011.643170

Sumter, S. R., & Vandenbosch, L. (2018). Dating gone mobile: Demographic and personality-based correlates of using smartphone-based dating applications among emerging adults. *New Media & Society*, 21(3), 655-673.

doi:10.1177/1461444818804773

Thompson M. P., & Morrison, D. J. (2013). Prospective Predictors of Technology-Based Sexual Coercion by College Males. *Psychology of Violence*, 3(3), 233-246.

Verto Analytics. (2019). Most popular online dating apps in the United States as of September

2019, by audience size [Graph]. Retrieved from

<https://www.statista.com/statistics/826778/most-popular-dating-apps-by-audience-size-usa/>.

Victims of Sexual Violence: Statistics. *Rape, Abuse, and Incest National Network (RAINN)*.

<https://www.rainn.org/statistics/victims-sexual-violence>