



“I just want to play games with friends and it asked me for all of my information”: Trading privacy for connection during the COVID-19 pandemic

Fiona Westin
fiona.westin@carleton.ca
Carleton University
Ottawa, Canada

Kalpana Hundlani
kalpana.hundlani@carleton.ca
Carleton University
Ottawa, Canada

Sonia Chiasson
chiasson@scs.carleton.ca
Carleton University
Ottawa, Canada

ABSTRACT

We conducted 22 semi-structured interviews with participants in the early stages of the COVID-19 pandemic when restrictions were in effect, to learn about social media users’ privacy behaviors and what influenced changes in behavior since the beginning of the pandemic. We found that participants felt pressured to stay “relevant” online, which led to increased consumption and sharing of content, as well as increased re-posting of older content. Participants also noted increased disclosure of negative emotional states and that they were expected to publicly display their stance in regards to social movements. Participants felt increasingly reliant on social media as a means of connection which led them to download and install additional social apps despite privacy concerns. Each of these activities has potential privacy implications in terms of explicit data sharing and in terms of increased sources of information for online behavioral tracking and profiling.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in interaction design**; • **Security and privacy** → *Usability in security and privacy*.

KEYWORDS

Interviews, Privacy, Social Media, COVID-19, User Study

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1 INTRODUCTION

Lockdowns, school and business closures, and health measures during the COVID-19 pandemic resulted in many life changes. Movements were restricted, and people were limited in their ability

to leave their homes, participate in activities, or socialize in person. People increasingly turned to social media for their social, informational, and entertainment needs [27, 33, 44, 45, 57]. How has this affected user privacy? Quantitative studies [26, 33, 39, 85] have demonstrated that existing drivers of addictive and problematic use of online media persisted during the pandemic. This suggests users are still, at least in part, being driven to continue their pre-pandemic habits. However, recent research shows that pandemic social media use takes a unique form. The types of online disclosures that are considered socially acceptable have shifted [57], and users are faced with new apps which they may feel pressured to download for reasons of health, collective responsibility, or social connectedness even despite privacy concerns [12, 35].

Through conducting and analyzing 22 semi-structured interviews, we delve more deeply into users’ privacy-related self-reported behaviors during the pandemic and COVID-19 public health restrictions. Our research question was:

RQ: *How are self-reported social media behaviors impacting user privacy during the pandemic?*

Our results include that participants feel compelled to continue regular social media habits, such as posting at frequent intervals, even when facing considerable disruptions to their social lives. Lockdown and the resulting lack of typical material to post (e.g., about recent social events, traveling) left participants with the feeling that there was “nothing to post about.” Nevertheless, they felt posting and interacting regularly online was important to staying in contact with their network. This led participants to adapt, rather than reduce, their social media use. Participants’ overall consumption of and engagement with social media increased. They posted about more personal activities and thoughts than prior to the pandemic, and more frequently highlighted past events through re-sharing. Participants were more likely to share or re-post existing content, to disclose their negative emotional states, and to publicly display their stance in regard to social movements. These behaviors have privacy implications, whether it be in terms of interpersonal (“social”) privacy threats, or organizational privacy threats [46] via the collection of reactive and non-reactive data.

As we will demonstrate throughout the paper, there are many reasons why participants chose to explicitly disclose. In some circumstances, participants revealed more information than intended without realizing they were doing so. We also noted instances where other users shared information about participants without their consent. Though not explicitly mentioned in our interviews, we also discuss the implications of platforms quietly collecting large

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amounts of behavioral data from users in the background without users’ realizing it. Though these activities also occurred prior to the pandemic, participants’ increased reliance on social media during the pandemic has exacerbated the problem, with potential long-term consequences.

2 BACKGROUND

2.1 Privacy concerns and user behaviors

Privacy is often broadly defined as an individual’s control over their information [1, 23]. Addressing limitations to the former definition, Nissenbaum [60] considers what, how, where, and with whom information is shared, with privacy being achieved when the subject’s intended context of information is preserved. Online privacy concerns can take many forms. Smith et al.’s model [74] encompasses a wide range of information privacy concerns, regarding the collection and storage of personally identifiable data, unauthorized internal and external secondary uses, improper access, and errors. Krasnova et al. [46] divided privacy concerns on online social networks into social (or peer) and organizational threats. Such concerns may affect users’ decisions to disclose on, or use, a platform [91, 92]. Conversely, users have also been found to behave in ways contradictory to their privacy concerns, in a phenomenon known as the Privacy Paradox. The paradox has received a range of explanations [1, 5], from privacy calculus where users may decide that the rewards of disclosing outweigh the costs [22], to positive-affect-inducing user interfaces leading users to underestimate privacy risk [43]. Taking these definitions into account, we define a *privacy compromising behavior* as any behavior which (1) puts the user at risk of any real or perceived (by the user) threat to the contextual integrity [60] of their information, and/or (2) negatively conflicts with the user’s reported privacy preferences.

2.2 Sneaky data collection

While privacy compromising behaviors such as overt disclosure of information have been discussed at length in privacy literature [8, 10, 49], the more covert ways in which users may inadvertently be sharing information about themselves or others can be equally problematic. Previous work has already raised concern over whether user self-management of privacy is effective for this reason [2, 42]. The simple act of using social media, even without ever publicly posting, can generate a significant amount of data about users, including what they are looking at, for how long, when, and where [17, 76]. From this information, habits and interests can be inferred. This is known as “non-reactive” profiling and is considered “quasi-biotic” by marketers, as subjects are often unaware this form of data collection is even happening [87]. As a 2020 WIRED article put it, “Instagram knows that you spent 20 minutes scrolling to the depths of your high-school crush’s profile at 2 am” [17].

Even so-called “private” peer-to-peer interactions on social media may be mined for data. None of Facebook, Instagram, or TikTok enable end-to-end encryption in their messaging services by default [69]; meaning theoretically their contents could be used for behavioral targeting. In fact, Facebook has admitted to using private messaging URL data for marketing purposes [30], and confirms that it continues to scan users’ messages, purportedly for safety reasons [65]. The mining of peer interactions can be especially

concerning since users not only disclose personal information, but often have information revealed about themselves by their peers even if it falls outside of their privacy preferences [2, 3].

Data collected by social media is often used for “personalization” and/or sold to third-parties, which has its own privacy and ethical concerns [4, 41, 80]. Once this information has been amassed by data brokers, it becomes difficult or impossible to remove [53]. The more data that is collected, the greater the privacy and security risk. Covertly collected social media data has been known to enable stalkers and abusers [68], endanger users’ *physical safety* [40], and negatively impact users’ overall ability to make free, autonomous decisions [93]. Meanwhile, personal data shared explicitly by users also comes with risks. It can impact users’ employment prospects via negative evaluations by hiring managers [55] or users’ social reputation [56], and may be scraped and used in spearphishing [79].

2.3 Privacy behaviors in the COVID-19 era

The COVID-19 pandemic resulted in widespread development of mobile apps intended to notify users if they had been exposed to the virus, i.e., contact tracing apps. Users displayed a high level of concern towards these apps [35], including in “emotional” ways on social media [12], despite contact tracing apps collecting relatively minimal data compared to many common social media apps [19, 57]. This may have been in part due to poorly-communicated information about how the contact tracing apps functioned [37].

Research has also suggested that users changed their disclosure habits during the pandemic. Nabby-Grover et al. [57] found a shift in what was considered acceptable to post: content about activities outside of the house became frowned upon, whereas activities inside of the home, as well as disclosures of personal COVID-19 risk factors, became more acceptable as they were considered to be contributing to the public good. Self-disclosure on social media was a moderating factor on the level of stress felt by users during the COVID-19 pandemic [90]. Depth of distress disclosed was affected by perceived affordances on social media such as anonymity, persistence, and visibility control [89]. Emami et al. [29] found that privacy and security concerns were main factors impacting users’ comfort in using remote communication tools during the pandemic and that users felt forced to go against their privacy preferences when choosing tools or activating their camera or microphone.

2.4 Platforms’ role in privacy-related behaviors

Online platform designs have received increased scrutiny to determine their involvement in promoting detrimental user behaviors. Social media use is widely linked to anxiety, stress, and dependency [34, 39], the latter which has been attributed to addictive qualities embedded in the platform design [14, 38]. Social media has also been shown to utilize design patterns particularly effective at *manipulating* user behavior, purportedly to meet business goals relating to user engagement, purchasing behavior and data collection [6, 52, 61, 64]. One prominent example of a privacy-compromising UI pattern is the ubiquitous use [62] of craftily designed cookie consent banners to trick users into legally agreeing to the maximum number of tracking cookies.

These manipulative patterns have negative implications for the autonomy of user privacy decisions; how can users freely consent to

sharing their data when they are being manipulated into doing so? Even more covert are potential infrastructure-level manipulative designs on platforms [86], particularly in relation to privacy. An infrastructure-level design goes beyond any single UI component, aiming to create an entire environment where the user is at a disadvantage regarding autonomy. Such an environment may lead to a state of ambivalence or cognitive dissonance [32] in users, such as when they continue to use platforms despite experiencing a “sense of creepiness” [63] or objecting strongly to the service’s interface and social norms [18]. Nissenbaum [60] theorizes that the presence of discomfort surrounding people’s privacy behaviors reveals a fundamental violation of contextual expectations of privacy.

Strongly linked to ambivalence on social media is the Fear of Missing Out (FoMO) [67]. Though causation has yet to be established in academic literature, FoMO is repeatedly positively correlated with increased and problematic social media use [25, 67]. Pre-COVID-19, Westin et al. [86] found that FoMO-related motivations led users to reluctantly participate on social media despite privacy concerns. The researchers discussed the likely existence of systemic-level “FoMO-centric” design to encourage privacy-compromising behaviors in users. As FoMO continues to be a driving force in social media use during the pandemic [27, 33, 39], we adopt aspects of Westin et al.’s methodology to help us explore users’ privacy habits during COVID-19.

3 METHODOLOGY

To address our Research Question (see Section 1), we conducted interviews to understand users’ self-reported privacy-related behaviors during the pandemic and how the pandemic has impacted participants’ social media usage. We received ethical clearance from our Institutional Review Board.

3.1 Recruitment and Pre-screener

We recruited participants through: (i) posts on our university research participants Facebook group and on social media, and (ii) posters shared in a workplace environment. Participants had to be over the age of 18, comfortable giving an interview in English, and a current or past user of the following “online social platforms”: social media, message boards, and/or online multiplayer video games.

Interested participants completed a pre-screener questionnaire on the online survey platform Qualtrics¹. The pre-screener checked that participants met the inclusion criteria and included Przyblylski et al.’s [67] validated 10-item Fear of Missing Out scale, which rates participants’ FoMO levels on a scale from 10 to 50. Higher scores indicate a stronger Fear of Missing Out. We prioritized recruiting participants with a range of FoMO levels, allowing us to interview participants with diverse relationships to social media. As research suggests there is no significant difference in FoMO between men and women [70], we did not pre-screen for gender in our study. Similarly, we did not screen based on age.

3.2 Participants

We recruited and interviewed 22 participants between the ages 18 and 45 (median = 24), with FoMO scores ranging from 11 to 41, and an average FoMO score of 25.8 (SD = 7.53). The distribution of

¹<https://qualtrics.com/>

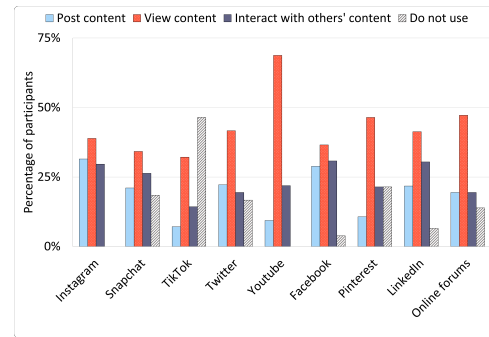


Figure 1: Types of participant interactions with social media platforms

pre-screener FoMO scores of interviewed participants can be seen in Appendix B. Research guidelines suggests anywhere between 15 and 30 participants is an acceptable sample size in qualitative interview studies [21, 51].

Our participants had a variety of educational and professional backgrounds, including Architecture, Accounting, Business, Computer Science, Human Resources, Journalism, Law, and Criminology. Amongst them, 12 were employed full-time, 3 were employed part-time, and two were unemployed; 4 were full-time students; and one identified their situation as “other”. Participants’ most frequently used platforms were Instagram, Youtube, Facebook and instant messengers, which they used daily or several times a day (see Appendix A). They tended to be primarily passive users of Youtube, Pinterest, online forums and TikTok, and they were more likely to post or interact with others’ content on platforms such as Instagram, Snapchat, Facebook, and LinkedIn (see Figure 1).

3.3 Questionnaires

We duplicated Westin et al.’s questionnaires [86], with the pre-interview questionnaire containing demographic questions, and the post-interview questionnaire containing Krasnova et al.’s [46] “User Privacy Concerns on OSNs” scale and a repeat of the FoMO scale from the pre-screener.

3.4 Interview sessions

Our interviews took place several months into the pandemic, during a period of significant public health restrictions and lockdowns. Using Skype² video-conferencing software, we remotely conducted 22 semi-structured interviews with participants. Sessions (including completion of the online pre- and post-interview questionnaires) lasted approximately 60 minutes. Participants were compensated with \$20. Interviews were audio-recorded and then uploaded to the online transcription service Trint³ for transcribing. We then manually reviewed and edited the transcripts for accuracy. The interviews resulted in 22.85 hours of audio that translated to 400 pages of transcribed interviews.

We used the interview guide presented in Westin et al.’s [86] work as a base, and extended it to include questions specific to users’

²<https://skype.com/>

³<https://trint.com/>

behaviors since the pandemic restrictions were put in place. Interviews centered on the following topics: (i) Posting habits, (ii) Joining and staying on platforms, (iii) Leaving platforms, (iv) Perceptions of others' online habits and expectations, (v) Online behavior and expectations since implementation of physical distancing measures. As interviews were semi-structured, the interview guide contained starting questions related to each topic, but not all interviewees were asked every question. During interview sessions, we did not prompt about specific platforms, allowing participants to bring up the platforms relevant to their social media habits.

3.5 Analysis

We followed a mixed deductive and inductive qualitative analysis method similar to that presented in Elo et al.'s work [28]. Both researchers conducting the analysis have backgrounds in usable security and privacy research. One has completed a Masters in human-computer interaction, and the other a Masters in computer science. Both have previous experience with conducting qualitative research and the corresponding analysis process.

Once all interviews had been transcribed, we imported the transcripts into qualitative data analysis software NVivo⁴ for thematic analysis coding. We began by conducting deductive coding and established an initial codebook based on findings from Westin et al.'s [86] study. We then inductively added more codes to our framework as we progressed through our analysis to capture the unique findings from our interviews. Both researchers then iteratively coded a few transcripts individually and met to revise the codebook until no new codes emerged. All interviews were coded using the final codebook by two researchers separately, and then combined to conduct a coding comparison. We discussed and resolved any coding disagreements. Once coding was complete, we followed Fereday et al.'s [31] analysis methodology, creating a table summarizing our data and identifying prominent themes. In Table 1, we identified the specific user behaviors, described how these could be used in privacy-compromising ways, and categorized the type of data collection. We noted the following three broad types of data collection:

Reactive data collection: data collected by the platform via 'active' platform use such as liking, commenting, posting, or sharing. Used in profiling to infer user interests and habits [81]

Non-reactive data collection: data collected by platforms during passive usage such as scrolling behavior and time spent on a given page. Used in profiling to infer user interests and habits [81].

Peer-to-peer information disclosure: users share information about themselves (or others) via likes, shares, comments, posts, and direct messaging, which is then seen by other users.

We followed the qualitative practices described by Sandelowski [71] and by Hannah and Lautsch [36], which advise against reporting counts in qualitative analysis. Because our interviews were semi-structured, not all topics were explored to the same extent with each participant, so counts would not accurately represent our data or the importance of any particular result.

⁴<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>

4 RESULTS

In the following subsections, we share the highlights of our study findings about users' privacy-related self-reported behaviors on social media during the public-health restrictions and lockdowns of the COVID-19 pandemic. We present our findings in terms of the larger themes driving this behavior which emerged during our interviews and analysis.

4.1 More scrolling, more tracking

"We're kind of doing nothing, so there's nothing to post," said P12 of lockdown-era social media use. Despite a lack of typical content to post or view, no participant reported their social media usage going down. In fact, most participants told us their overall time spent on social media had *increased*. For instance, P3's use of Facebook went from previously checking it "once a month" to being on the platform daily. Some of this was due to a lack of outer life structure. "Before [COVID-19] I had a schedule [as to] when I would respond and check stories, and now it's kind of whenever I feel like it" (P13). Another factor was a desire to stay in the loop about friends' lives and current events. This led participants to stumble upon and/or follow a greater amount and variety of content than ever before.

Now I read everything [...] maybe because I have more time, or maybe because I don't know what is happening in the outside world like I would if I was going out. So I just want to keep myself up to speed. But yes, I read everything and anything in my friends' posts, music, afro dance, anything hair, food. It's crazy. I do everything" (P4).

This increased consumption feeds behavioral profiling [81] and relevancy algorithms as platforms learn more about user interests and behaviors. Even when not actively posting, non-reactive data collection can include information about videos watched, location data, data about phone model and system used, and even the content of users' clipboards [78]. Some participants exhibited awareness of such data collection. "[T]racking, data usage, advertising, I hate all that stuff. I find it's an invasion of privacy," says P10, referring to such practices as "not kosher." P10 expressed particular concern over unauthorized external secondary use of his information. "[M]y biggest concern and beef with all these technologies is the sale of my usage information and data to others that I haven't necessarily consented to explicitly. It's hidden somewhere, I know, in [the] terms and [conditions]" (P10).

During the pandemic, participants also joined platforms that they perceived as useful in supporting their increased desires to stay in the loop and fill time. Chief amongst these was TikTok, which attracted participants in part due to its unique form of content (such as trending quarantine-related challenges), and in part due to its popularity amongst friends. TikTok is the ideal platform for users who feel they have "nothing to post" (P14), as participants felt it was acceptable to simply view content, in contrast with other platforms such as Instagram or Facebook, where participants felt social pressure to post.

However, participants reported numerous privacy concerns over TikTok. Some avoided installing it for privacy reasons: "I actually don't use TikTok because I learned in class that it's owned by a company that tracks you," said P7. But others joined regardless. "It will ask about your location. And then they'll ask for, I think, your

User behavior	Privacy implications	Data collection	Section
Increased consumption of content Participants spent more time spent on social media, viewed more content and engaged with a larger variety of content.	Behavioral profiling	Non-reactive data collection	4.1
Increased sharing content Participants reported sharing more interest-related content that they came across while scrolling.	Behavioral profiling; Revealing personal interests and/or political views	Reactive data collection; Peer-to-peer information disclosure	4.2
Increased “#throwbacks” or “memories” posts With less current original content to post, participants reported increased re-sharing and/or posting of older personal content.	Behavioral profiling; Revealing personal details about self or others; Potentially embarrassing other users	Reactive data collection; Peer-to-peer information disclosure;	4.2
Sharing more personal details of daily life Participants shared more private and personal details about their life, documented activities in the home, and documented hobbies and fitness.	Behavioral profiling; Revealing details about their home and lifestyle;	Reactive data collection; Peer-to-peer information disclosure	4.3
Social obligation to publicly engage in social movements Participants felt pressured to publicly voice how they felt about social movements.	Behavioral profiling; Employment; Safety	Reactive data collection; Peer-to-peer information disclosure	4.4
Joining new platforms Participants felt obliged to joined new platforms despite discomfort in disclosing privacy intrusive information requested by the platforms e.g., Zoom, TikTok and Houseparty.	Behavioral profiling; Revealing sensitive/personal information; Location tracking; Safety	Reactive data collection; Non-reactive data collection	4.5
Socializing online During lockdown, participants largely moved their social interactions online, connecting with friends and family virtually via Houseparty, Netflix party, Zoom meetings, and WhatsApp/FaceTime calls.	Behavioral profiling; Revealing personal details about self or others; Increased surveillance over social activities	Reactive data collection; Non-reactive data collection; Peer-to-peer information disclosure	4.5, 4.6
Increased disclosure of negative emotional state Participants noted they and their friends were more likely to post personal, negative, and/or introspective content during COVID-19.	Behavioral profiling; Employment; Revealing personal details about self; Negative evaluation (judgment)	Reactive data collection; Peer-to-peer information disclosure	4.7

Table 1: Summary of users’ behaviors and their privacy implications

microphone to be on 24/7,” noted P13 – who ended up joining the platform despite privacy fears.

[E]veryone was like TikTok, TikTok, TikTok. And I was like, ‘I’m never getting on that app.’ Then quarantine came and I was bored out of my mind. So I was like, let’s download TikTok. Three months have passed by. Where has the time gone? I’ve spent it all on TikTok. (P14)

Beyond boredom, one motivation participants mentioned for joining platforms was “to be a part of things” and “the fear of missing out, fear of not being a part of the bigger crowd, not knowing what’s happening, what’s going on” (P1). P2 felt there was safety in numbers when it came to joining a privacy-compromising app, in the case of a data breach. “[I]f my friends or somebody else had already installed it [...] now both my friends and I will have their information released. So I may not be the only target.” Other participants had adopted a stance of helplessness when it came to their online privacy. “This smartphone is tracking you everywhere, on a daily basis. They can track you with everything. Wherever you go, whatever you buy, whatever you talk about. That’s [some]thing I don’t like at all. Because there is no privacy left” (P16).

4.2 Maintaining social media presence via re-sharing content

Although most participants reported a decrease in posting original content, many suggested the frequency with which they *share* existing content had increased, and in some cases, this sharing was with larger audiences. This translates into users revealing potentially sensitive information relating to their interests or political affiliations through sharing relevant posts. P13 found herself sharing more “informative” content, such as articles and news, while P21 shared more content related to COVID-19-specific news and world events, as well as lighthearted posts aimed to make others laugh or boost their mood.

[I’ve been sharing] maybe a bit more in terms of diversity. I share memes or something that kind of uplifts your spirit, and deflates the hard times for everyone. During COVID-19, I tend to share with a lot more people than I used to; and definitely more frequently. Because I am there a bit more and tend to find more and more funny things. (P12)

Participants also reported that re-sharing or re-posting of older content (known as “memories” and #throwbacks) had increased. By re-sharing older content or posting #throwbacks, participants are generating reactive data, drawing the attention of their peers to content about themselves or about others that previously might

have taken more effort by others to discover. While this may be seen as endearing or nostalgic to some, others may consider it embarrassing and a violation of privacy [20], especially if the older content does not match their current sense of self [7]. Additionally, freshly highlighted content revealing unflattering past behavior may harm users' employment prospects [55]. Despite these privacy risks, participants continued sharing to maintain their social media presence, wanting to maintain a connection with others (P13) and using interactions on social media as a proxy for their formerly offline activities. This led users to share increasing amounts about themselves on social media, though some chose more "private" peer-to-peer avenues such as direct messaging.

[My friends and I] are so used to keeping up-to-date with one another in real life, and now that we can't do that, we have to turn to these media platforms. So I definitely feel pressured to keep them up-to-date with my life. (P7)

With COVID-19 restrictions in place, people were unable to have the "same level of experience" as before (P18). "[T]here is no reason to dress up and take pictures or anything," muses P20. Therefore, recycling existing content or posting never-before-seen older content became the preferred method of maintaining their presence on social media and staying relevant. "I have one friend who added a whole video about us in Hawaii, because she missed Hawaii so much [...] everyone who's on my feed is posting in places where they don't live. It's obviously from another time" (P15).

To ensure otherwise outdated photos and videos appeared currently relevant, participants and their friends used commentary to appeal to others' yearning for pre-pandemic times. Throwback posts were accompanied by trending captions or tags such as "pre-corona" or "Throwback to the time I was not at home." P18 explained this also happens with other content not directly related to the pandemic:

I feel like a lot of people try to relate COVID-19 or social distancing to pictures or their posts. Even selfies – people will take a picture of themselves and be like, oh, "#quarantinehair," "#quarantineoutfit," just to relate to people. (P18)

While users may post potentially unflattering content of themselves and share them with peers to be part of a current trend or to be perceived favorably in the moment, earlier research shows many later regret these types of posts [72, 84]; it remains to be seen how users will feel about the presence of these posts after the pandemic.

4.3 The personal becomes public: mundane activities take the spotlight

Participants were preoccupied with maintaining presence on social media and exhibited anxiety over their lack of content relative to before the pandemic. They found reasons to post about current life events where they could. "I just graduated during this fun time, and on Instagram I made a couple graduation posts. Prior to that, I hadn't really posted in about a month or two" (P21).

With a lack of more "public" life to record and post, participants turned to the more personal details of their life to provide them with content to share on social media. Participants noted that they and their friends were now documenting previously mundane activities in the home, or taking up new hobbies and recording them, in

order to generate content. "Painting, baking, DIY projects, fitness. Everyone's suddenly into fitness" (P14).

We asked participants if expectations of how they conduct themselves on social media had changed from before the pandemic. Despite major changes mentioned previously such as that there was "nothing to post," most participants' answer, surprisingly, was a simple "no." P1 felt that people are still *expected* to post the best parts of their life online, despite being in the middle of a pandemic.

I don't know that things have changed very much in terms of our expectations to be doing well and showing our best parts of our lives online. I think people are still trying to keep up appearances, for example, showing the good habits they've picked up or what they're eating, healthy food they're eating or the recipes they're trying. So I think there is still kind of the same expectation to look good. (P1)

Many participants still faced a social expectation to document and post about their lives on a regularly basis. P19 spoke similarly, stating, "People are expected to post, I guess frequently and about their friends or whatever. And people are still posting that. So I assume that those same expectations are there." Participants also expected established social media habits to take precedence over any potential disruption to usage. "I mean, people who like to post things, they would continue to keep posting what they want to have and what they really like," said P2; "the people who believed in conspiracy theories before believed in conspiracy theories now. I feel like people are kind of the same," said P3, and "The same people who change their Facebook profile pictures are changing their Facebook profile pictures. The same people who post daily are posting daily," said P19.

Among those who said they noticed a change in expectations, we found polar opposite interpretations. On one hand, some participants said they feel expectations are more relaxed when it comes to type of and amount of content posted or engaged with (for example, the messy #quarantinehair selfies mentioned in the previous section). Participants said there is a mutual understanding amongst users that posting habits may be different from before due to the lack of "significant events" in users' lives. On the other, participants felt more pressure than ever when it comes to their involvement on social media. P17 said there is now an expectation to be even *more* involved on social media.

P21 expressed concern over a sense that since the pandemic started, people's online presence has, even more than before, come to represent the "be-all end-all" of themselves as a whole person. This authoritative online self is then subject to harsh value judgments by others. Perhaps as a result of this, P7 said that people are now "more aware of the words they say" online. Interestingly, P21 instead pointed to judgment due to *lack* of visible online participation, rather than participating in a negative way.

Social media has kind of become the be-all end-all; if you're not posting about it online, people are really judging you about things – no matter what you're actually doing in your everyday life. Which I think is definitely an attitude that has developed a lot more over the course of COVID-19, just because the main form of communication that people have been having is social media. (P21)

In other words, a lack of participation is considered negative participation. Users continue to be pressured to participate in *some way*,

and are further pressured making sure that they do so in the *right* way – to avoid negative social consequences. P11 speaks to the actions she takes when online friends do not post enough. “I feel skeptical of people if they do not share stories or post and if they follow me, like everyday. [...] I feel as if they were like spy[ing] because I don’t know their life [...] That’s why sometimes I try to hide my stories from [them].” From a privacy perspective, participants felt forced to engage in peer-to-peer information disclosure despite privacy concerns or privacy preferences because their previous venues for more privacy-preserving in-person interactions were unavailable, and opting out was not a viable alternative.

4.4 Silence means indifference: obligation to publicly engage in social movements

The timing of our interviews coincided with an increase in media attention on police brutality in the United States. When asked about current online trends they had seen or participated in, most participants referred to postings about the social justice movement Black Lives Matter (BLM) [13, 16]. Other prominent trending subjects included LGBTQ+ Pride and Global Warming awareness.

Participants voiced privacy concerns over the social expectation on social media to publicly participate in social movements, and the negative pushback that happens when users choose to abstain. Participants were also critical of social media’s ability to reduce participation in social justice movements to “trends” that favor quick re-posts and instant validation over meaningful reflection and engagement. Some participants found this behavior disingenuous. “If I’ve seen that you’ve changed your Facebook [photo] to the French flag and then you change it to the Pride flag and all that sort of stuff. But I know you and I know that you’ve done nothing else, then I’m just like, you’re not really putting your money where your mouth is” (P19). But participants feel pressured to participate in such public pronouncements even if they viewed them as superficial or performative. In line with the online expectations discussed earlier, lack of public participation is painted in a negative light, and users face tangible pushback if they fail to meet posting norms. P7 referenced Black Lives Matter:

If you don’t re-post, and if you don’t share a post for this movement, people will think that like you’re racist, or that you don’t support it or that you’re being complicit in being silent. So in that sense, I definitely feel the need to jump on the bandwagon [and post about it]. (P7)

Many participants felt driven to post about a movement because they personally supported a given cause, and felt that adding their voice would support the trend and spread awareness regarding social issues or injustices. But many also felt restricted in *how* they participated: most felt pressured to engage in a certain accepted level of online participation, regardless of how much they were doing to support the cause privately or offline.

I definitely felt the pressure because people were saying, ‘in-action is violence as well’ and stuff like that. I felt like if I wasn’t actively sharing things, even if I was participating in a different kind of social activism around it, there was going to be a lot of scrutinizing of me. (P21)

This is problematic for users who prefer not to post about such topics online, whether for privacy (from peers or organizations),

safety, or other reasons. Social media activity by protesters and activists in the past has been linked to their arrests, or to endangerment of their safety or the safety of others around them [9, 40, 77]. This blurring of publicly posting personal opinions, especially on controversial topics, can sow discord within their social circles, and can also have significant consequences in other areas of their lives, such as in hiring or firing decisions [24]. Some participants said they prefer to remain neutral and not post anything online that might impact their employment.

Not everyone has the luxury of being able to express their opinions freely and not be reprimanded by whether colleagues, their work or whatever. So it’s a double edged sword. Employers today, when they’re hiring someone, they’re looking at everything that they have online. They’re looking at their Facebook and LinkedIn and Indeed and Twitter and activities across these platforms. So if there’s the slightest inclination of an employer to be prejudiced against someone who’s supporting, let’s say, the BLM cause, they might take that into consideration. Unfortunately, you won’t know as a candidate that this might have caused you to lose a potential job. (P10)

P17 felt similarly, saying by publicly participating in a social movement online, you’re “labelling yourself [...] For example, if somebody speaks out more about feminine rights, she gets labeled as a feminist. So I don’t want to put a label on myself on anything that I swing towards one more than the other. I’d like to remain neutral.”

Some participants explained that they engage in social issues on social media, but do so privately via direct message, hoping to both gain understanding and educate. These more private forms of engagement may be more impactful on a personal level but do not impact the public persona others may use to judge them (for good or bad). Platforms, however, may still collect behavioral profiling data from these sources.

As a person of color, I not only want my voice to be heard; I want just the right amount of justice and the right amount of fairness for my community. [E]ven recently in my country [of origin], there’s been issue of rape without justice, killings without justice. And things like this make me speak up even if I don’t want to. I may not speak up publicly, but I fight it with my fingers in direct messages. “This is not right! This should not be!” and things like that. Yeah, so posts like this, trigger my response. It triggers my involvement in social media. (P4)

Participants were vocal about their desire to participate in the ways they chose and maintain control over what they consider to be private thoughts or attitudes, rather than being obligated to participate publicly via social media.

I can participate in whichever way. I mean, there are people that donate things, you don’t necessarily have to post on your page to participate. They [can] think whatever they want to think. I really don’t care. They do not know what I am doing in my own little way to participate. So, I don’t think anybody should judge me for not participating. (P20)

4.5 Streaming live: Grant ALL permissions to proceed

Participants mentioned attending a variety of virtual events with friends during lockdown, especially in the initial stages of lockdown.

Several participants had some variation of a weekly virtual meal with friends, whether it was “Friday Skype meals” (P13), happy hour, cooking together, or ordering meals for each other through UberEats. Virtual game nights and movie nights were also popular. Not all participants reported posting online about the virtual events they attended, but most saw their friends doing so.

Participants displayed symptoms of privacy reluctance related to either attending virtual events, or in installing the software necessary to participate. Zoom was mentioned nearly unanimously as software they had to install, usually for work. Another app installed despite privacy-related discomfort was Houseparty. Participants installed it to support their friends or avoid being excluded from virtual get-togethers.

That Houseparty game asks you, like, every question under the sun. [...] [N]ame, phone number, email access to your location and access to, I don't know, your browser history or something like that. [...] And I'm like, if this thing asks for my mother's maiden name, this is like the most in-depth phishing thing I've ever seen in my life. But I did sign up [because] I wanted to play games with friends. [...] I just want to play games with friends and it asked me for all of my information. (P19)

Some participants mentioned deleting an app after their privacy discomfort became too great. P19 deleted Houseparty after playing a couple of rounds with his friends, and P1 deleted Snapchat after getting a “big brother feeling” from the map feature, which displays users' location to friends. Even upon deletion, reactive and non-reactive data has already been collected by the platform, and likely provided to third parties and/or used for behavioral profiling [75], leaving users with no real control over it. Participants were willing to maintain connection with those closest to them in ways that included personal privacy compromises. P6 summed up the internal conflict of privacy and convenience, saying users have been conditioned to:

Just agree and continue because otherwise you can't use it. And what you want in that moment is to use it. So you don't really care about the consequences. [...] I feel like it's creepy, but we're used to it [...] it's something that we live with on a daily basis. We're used to it, sharing our information, and we do it without thinking. (P6)

In terms of joining, leaving, and moderating the amount they disclose on platforms, participants demonstrated different levels of privacy concern based on how obvious it was that their data was being collected and used. P3 mentions his discomfort with Google Maps, which shows the user information such as locations visited and reviews written. “[W]hen I see a profile of myself building online and that kind of information gathering, I feel increasingly uncomfortable over time.” This is in contrast with platforms like Twitter and Facebook, where the effect is less obvious. “I feel like most of what I post [on Facebook] is so boring that I can't imagine it's ever going to affect me. [...] [On] Twitter, a lot of what I put there is generally innocuous and really strong views [from] other people that I'm just retweeting. So I feel safe about it.”

Others felt pressured to attend virtual events to avoid appearing as uncaring: P20 joined a Zoom class taught by a friend out of obligation to show support. After reluctantly joining a virtual event, participants felt pressured by platform features, such as publicly

visible attendance cues, to stay for the entire event to meet social expectations.

I watched a Facebook live of a sex reveal for a baby. I felt that I had to watch until the end, because they started it so early that it was like ten minutes until the reveal actually happened. But they can see that you're 'watching now,' so I felt like I had to sit there and watch it. I felt like I would have hurt their feelings if I'd left because then they would have thought I didn't care about the sex of their baby. (P17)

Some privacy-concerned participants, such as P12, opted to access in-browser versions of apps as a workaround to avoid some of the cited privacy concerns related to downloading and installing new software.

As shown, social pressure appears to be a driving force behind platform adoption and use during the pandemic. This led some participants to reluctantly engage in privacy-diminishing behaviors due to the immediate social implications of refusing to engage. Participants were often unhappy with this compromise but felt that they had no other real option.

4.6 Posting about socializing during COVID-19

The desire to stay relevant led several participants to post about virtual events, especially near the beginning of lockdown, when novelty was still high. When asked why she posted about virtual events, P15 spoke candidly: “Probably because there's nothing else to post about.” The fact that participants would rather post *something* – even if they do not find it particularly interesting – speaks to how pressured participants feel to maintain social presence and relevance. Participants want to assure other users they are doing *something* interesting with their time. “I guess it's good to show that you're keeping active or finding activities to do” (P15). Participants felt that others would assume they were lonely, bored, or idle, if not actively posting during lockdown. “[If I don't post] I'm scared that people will be like, ‘Well, what else are you doing?’” (P21).

Conversely, some participants opted to keep their virtual get-togethers to themselves. This tended to be because they either considered it a private event amongst friends, or a routine occurrence that did not warrant public attention. “[I]t was something that we created for ourselves in order to keep connected with our friends. We used to go out every weekend to a bar to play pool or karaoke [...] so this just kind of replaced what we used to do” (P17). Other participants settled for a middle ground, sharing event details only with members of a closed group. For example, P19 shared highlights of Jackbox games in a group chat, so that those who could not attend would not miss out on the fun. By virtue of hosting these events online, however, participants still revealed more information (e.g., to the platforms) than would have been captured had they held the same event in-person, even if they kept the details private.

When it came to posting about offline socializing, participants tended to feel it was acceptable, as long as it was obvious proper health guidelines were being followed. On the other hand, participants voiced disapproval or anger over seeing others post about gathering in careless ways. Lack of compliance resulted in visible public pushback.

I think recently there were people posting stuff that people were not following guidelines, like a lot of influencers were attending parties [...] People are just commenting on how he was selfish, just like condemning people who are not wearing masks. (P22)

In order to avoid such pushback, participants reported posting in transient ways such as on Stories, when not following social distancing guidelines. This allowed them to strike a balance between sharing their experiences and avoiding the full brunt of social disapproval. P18 told us she primarily saw friends posting about seeing others in person “on platforms such as Snapchat, where their stories will go away after 24 hours. I think that’s just because if they were on the Internet permanently, then people would definitely, they could screenshot it, they could judge them and they could accuse them of not following those measures.”

4.7 Increased disclosure of negative emotional state during COVID-19

Compared to pre-pandemic, participants saw increased peer disclosures of negative emotional states on their feeds.

A lot of people started whining and complaining a lot more, which caught me by surprise for some people because I didn’t expect them to be the whiny type. And some people became very dark, pessimistically dark. They’re like, ok I’m getting depressed. When is this going to end? And what next? (P10)

Participants reported an increase in personal or introspective posts. Just as they were sharing photos of more laid-back “pandemic” versions of themselves, they were also sharing other usually private versions of their inner thoughts. “On Twitter, [my friends’] tweets are more self oriented; they’ll talk about themselves online more than they usually would. I don’t know whether that’s for attention or like a form of validation or just out of boredom” (P18). Some participants began to find shows of happiness to be unbearable, leading them to unfollow the perpetrators altogether.

“I couldn’t stand to see some bloggers sharing their happiness during COVID-19, because I think it’s also normal to be unhappy. And I cannot stand to see fake happiness because it makes people to feel that ‘I have to be happy.’ No, you don’t have to be happy all the time” (P11).

Some participants acknowledge that the pandemic lockdown may be causing mental and emotional strain on users’ mental health. They found that speaking more candidly than usual is accepted online in a way it was not before the pandemic; they can be “a little bit more free” (P13), and people are “more forgiving if you don’t conduct yourself in a mature manner on social media” (P18). P1 reported feeling pressured into being more frank on social media, such as through trending tags related to mental health: “[T]here’s pressure to always be contributing to the conversation that’s current, that’s relevant.” Although efforts have been made to reduce stigma surrounding discussing mental health, this still has the potential to expose users to discrimination [11]. Alternatively, by relaxing their ‘filter’ and voicing potentially offensive personal thoughts, users put themselves at heightened risk of very public backlash and ostracism in the form of getting “cancelled” [59]. Either of these can have long-term consequences for users.

Even when participants were not enjoying their time on social media, they still felt that they had no choice but to continue to use

it. “I do feel a lot of frustration from being on social media, but because there’s nothing else to do than be in your house, I still stay on it despite the frustration” (P3). P16 suggested that social media can be both a helpful tool and a crutch. “[S]ocial media has helped us to not feel so isolated or be lonely because you get more connected with friends and family. But there has to be some limit. You cannot do this everyday.” However, people *are* doing it everyday. “I use [social media] more, that’s why I am suffering, I feel addicted” (P11). P19 said despite best efforts to reach out to friends over social media, he remains ultimately unsatisfied: “the interaction isn’t there as much.”

Several participants mentioned consciously stepping back from social media when they notice this negative impact on their mental or emotional health.

I just find myself getting more depressed [...] I try to do things that are more productive, like go for a run or take an online course. I try not to go on social media too much. I try to use it in like a healthy way. (P5)

For P6, lockdown has been a wake-up call, resulting in radically changed habits and a rejection of social media norms. “I don’t look at my phone so much and I don’t Snapchat or take pictures... I’m more like, I want to live in the moment.” In this way, P6 felt able to break free, at least in a small way, from the chain of data collection.

5 DISCUSSION

We first discuss our results in the context of our research question.

5.1 RQ: How are self-reported social media behaviors impacting user privacy during the pandemic?

Findings from our interviews suggest that despite major changes to their social lives, users feel obliged to adhere to pre-pandemic expectations regarding frequency of information disclosure on social media. When met with the problem of “nothing to post,” rather than *reduce* their posting habits, they instead *substituted* formerly acceptable content (in-person social gatherings, traveling, etc.), with newly or increasingly acceptable content (at-home hobbies, virtual events, #quarantineselfies, #throwbacks). They also installed new apps and increased passive consumption habits to keep up with their network. This translated into privacy implications in the forms of peer-to-peer information disclosure, and reactive and non-reactive data for collection by platforms and behavioral profiling.

Our findings have implications both within the pandemic context and beyond. Our findings suggest that some user habits, such as frequency of disclosure, are entrenched in social media use; we see this demonstrated by the persistence of these habits even in times of substantial and prolonged disruption. We propose that the usability community consider *why* these particular habits might be continuing, and the role that platforms can play in users’ privacy behaviors. While it is on the one hand surprising that users went to such extent to fabricate content to post on social media, it is less surprising when we consider the desire for social connection and the overall environment afforded by social media platforms. Prior to the pandemic, Westin et al. [86] had identified FoMO-related motivations such as “staying in the loop” and “avoiding falling off the face of the planet” as central to users’ continued social media

use even in the face of privacy concerns. They suggested the reason why these motivations are so strong is because they are built into the platform’s infrastructure; designs afford an environment where users are locked in and face social consequences if they do not comply with the platform’s norms. Other research has also suggested the goals of social media platforms are often not satisfying user needs but rather encouraging continuous engagement [63, 73].

Users rely on these platforms, now more than ever, feeling they have no choice but to continue consuming content, posting, disclosing their viewpoints, and installing software, even when they have privacy concerns. Uncertainty surrounding the pandemic has led to an increased desire for updates, news, and a sense of shared community. Without in-person contact to augment users’ online personas, and with an audience which is spending more time online and thus has more time to judge, users are feeling an increased pressure to curate an online projection of self which will be accepted by the community, even if it means making public proclamations they would prefer to keep private. As discussed earlier, this has privacy implications both in terms of potential judgement from peers and employers, and in terms of surveillance via platform data collection.

5.2 Designing for privacy

To help mitigate problematic or harmful social media use, Marin [50] suggests interactions should be designed to be “thoughtful, critical, and meaningful” to give agency back to users. One way of accomplishing this might be to incorporate “useful friction” [58] into platform designs. Research [54] has shown that participants prefer designs with friction more than those without, because the slight delay enables them to consider their actions and the potential consequences. “Privacy nudges” on platforms may be another promising direction, i.e., in providing visual cues about audience and introducing time delays [83], or in indicating how frequently information is used [88].

However, such approaches still largely put the burden of privacy on individual end users. Jia et al. [42] recommend a more collaborative approach to privacy, which acknowledges that an individual user’s privacy is codependent with their network. Ultimately, regulatory measures may be needed to encourage more privacy-friendly platform designs. There have been increasing calls from HCI and privacy researchers for stricter regulation of social media design and to reduce exploitation of users [15, 48]. Such calls have helped prompt creation of legislation in the EU [66] and the US [82] to ban design which interferes with users’ ability to freely consent to the collection and use of their data. However, existing measures have been criticized for their limited effectiveness [47, 62]. As long as social media platforms are designed to favor those who disclose more about themselves, users will continue to feel pressured to engage, regardless of how many stop-gap measures platforms add. We encourage readers to consider a rethinking of social media from the system level, considering the overall type of social environment we create for users.

5.3 Limitations and Future Work

As with any self-reported interview data, our participants may have been selective in what they chose to tell us, may have forgotten

events, or may have remembered events differently from how they happened. All of our interviews took place during the first lockdown in the researchers’ area, but data collection was spread over several weeks, meaning participants’ attitudes were likely affected by the fluctuating levels of restrictions. Furthermore, additional factors beyond the scope of the paper may also affect users’ decisions to disclose information online. We encourage those to be explored in future work.

Also due to the timing of our interviews, when asked about trends, participants overwhelmingly focused on one: Black Lives Matter. It is unclear if participants would have felt or behaved differently if this movement had happened outside of COVID-19, or if its effects were amplified due to the increased passive use of social media. Because of this, the two must be considered in tandem.

Future work in this area might benefit from another round of interviews to compare early-pandemic and late- or post-pandemic behaviors. As we did not focus on age, gender, or other socio-economic factors in the present study, these could be factored into a future study.

6 CONCLUSION

We explored participants’ privacy-related self-reported social media behaviors during COVID-19. We conducted interviews with 22 participants and found evidence that they feel continued pressure to stay “relevant” on social media to avoid negative social consequences, despite feeling they have little original content to post due to the pandemic. This led to increases in three types of data collection practices — non-reactive, reactive, and peer-to-peer disclosure — as participants increased consumption of content (to “stay in the loop”), joined new platforms, and increased their sharing and re-posting behaviors. Participants also noted an increase in disclosure of negative emotional states and that they were expected to publicly display their stance in regards to social movements. We also discussed how social pressure continues to be a driving factor in users’ privacy-diminishing behaviors despite discontent and privacy concerns from users, all of which may point to the need for a radical rethink of platform design to give users more autonomy over their actions and their data.

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A DEMOGRAPHICS

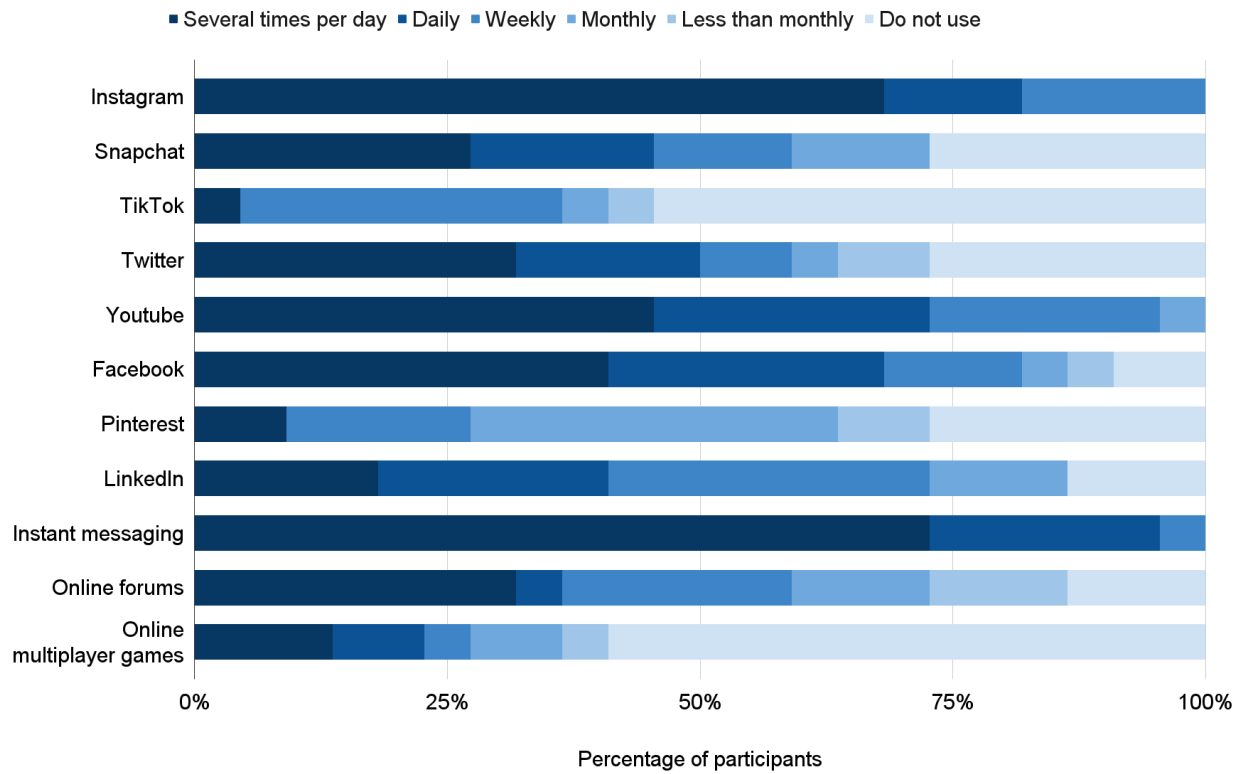


Figure 2: Frequency with which participants used social media platforms, discussed in Section 3.2

B FOMO SCORES

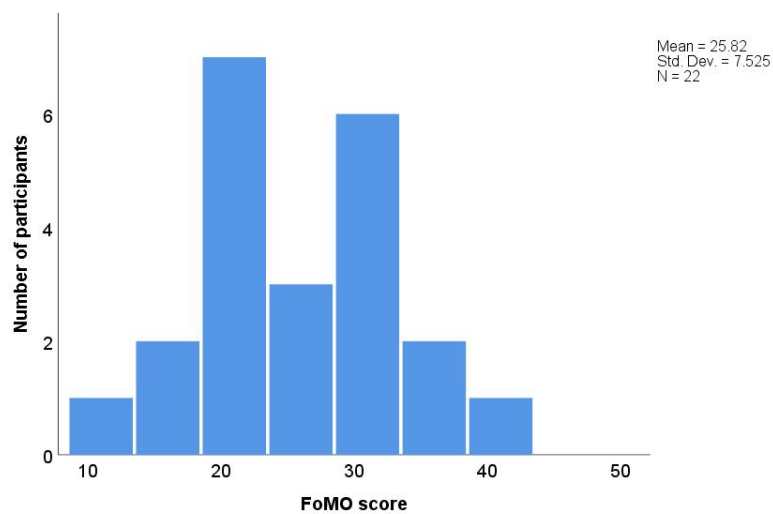


Figure 3: Distribution of FoMO scores for interviewed participants, discussed in Section 3.2