Young people's use and experience of the Internet during the COVID-19 lockdown: Well-being and social support

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Abstract

No studies we are aware of have explored youth's experiences of the association between their Internet use and well-being during the COVID-19 lockdown. To fill this void, we used survey data of a representative sample ($N = 734$) of young Norwegians (16–26 years old) collected a few weeks into the lockdown in May 2020. Findings show a substantial increase in use of several Internet activities — in particular, video calls and streaming services. Snapchat and Messenger were the most important services used to keep in touch with friends. Online social support significantly predicts higher well-being, while heavy Internet use during a regular lockdown day significantly predicts low well-being, particularly among older females. Analysis of free text responses shows that excessive Internet use during lockdown has led to poor well-being among many, both mentally (38 percent) and physically (17 percent). Many describe purposeless online scrolling or interactions as problematic. We conclude that future research on online well-being should focus more on perceived level of meaningful online activities.

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Introduction

The COVID-19 pandemic — with lockdowns, quarantines, and social distancing — has massively interfered with everyone's social life. When social restrictions are imposed and a society is locked down, online life becomes more important. The measures taken to control the pandemic may be particularly challenging for young people. First, socializing and friends are crucial for youth and young adults (Brown and Larson, 2009). Second, a lockdown situation likely leads to increased reliance on online communication among an age group that already spends a lot of time online.

Young people's social support and well-being are key concerns often raised about the impacts of social media and digital technologies (Gentina and Chen, 2019; Nowland, *et al.*, 2018; Odgers and Jensen, 2020; Orben, *et al.*, 2019; Orben and Przybylski, 2019; Schønning, *et al.*, 2020), particularly in situations with excessive online use (Helsper and Smahel, 2020; Kardefelt-Winther, 2014). During the COVID-19 lockdown, young people have been forced to move most of their social lives online, possibly with considerable consequences for their well-being and access to social support.

During the pandemic, several studies have focused on the effects of COVID-19 on young people's mental health and psychological well-being (*e.g.*, Cao, *et al.*, 2020; Hafstad, *et al.*, 2020; Konstantopoulou and Raikou, 2020; Wickens, *et al.*, 2021), without paying attention to the uses of the Internet. Many of these studies have also focused on small local samples. Few if any studies have examined these issues in relation to Internet use in general. A recent review from before COVID-19 suggests that there is a lack of studies examining how youth experience and perceive the relationship between Internet use and well-being (Schønning, *et al.*, 2020). Therefore, little is known about the reliance on the Internet during lockdown and how online use and experiences relate to well-being and social support.

In this paper, we address these issues by analyzing survey data from a sample of Norwegian youth and young adults (16–26 years old). The questionnaire included measures of online use patterns, well-being and social support, and two open-ended questions, about negative and positive experiences of using the Internet during lockdown.

The study was conducted in May 2020, after two months of lockdown in Norway. As in many other countries across the globe, larger parts of the Norwegian society locked down to limit the spread of the coronavirus. Measures taken by the authorities comprised social distancing and quarantine, including closing schools

and other educational institutions for two months (Hafstad, *et al.*, 2020). Cultural and sporting events were also banned. The extensiveness of the lockdown was unprecedented.

We suggest that the lockdown situation, with excessive Internet use, provides a specific background for investigating the social implications of online use. We extend previous research by examining the association between young people's Internet use during lockdown and their experiences of physical and mental well-being. We conclude by discussing implications of young people's online lives during the pandemic, with a particular focus on the role of social support and well-being.

Background

We next summarize research related to well-being and social support and how young people may be affected by excessive Internet use.

Well-being

Well-being refers to the state of functioning effectively; feeling confident, content, and engaged; having a sense of purpose; and experiencing positive relationships (Huppert, 2009). Both physical and mental health are core aspects of individual well-being. Social relationships and involvement are among the many factors determining people's well-being (Huppert, 2009). For young people, even more than for older age groups, digital communication is an important part of social life. Well-being hence also depends on having a purposeful and affirmative online life. Certain patterns and intensiveness of Internet use may, however, affect well-being negatively. Research proposes that excessive Internet use, which reflects use patterns that affect normal functioning of users (He, *et al.*, 2018), is associated with depression (Ivie, *et al.*, 2020), anxiety (Primack, *et al.*, 2017), and lowered life satisfaction (Boniel-Nissim, *et al.*, 2015). Excessive use has also been associated with negative online experiences, fewer in-person social interactions, and lower attention span (Shensa, *et al.*, 2018). Psychologically vulnerable children and youth appear more likely to spend more time online and to experience negative outcomes of their intense-use patterns (Helsper and Smahel, 2020).

A Spanish study found that the prevalence of problematic or excessive Internet use among adolescents is 16.3 percent and that such use is higher among females and those in their late teens (Gómez, *et al.*, 2017). Relatedly, Orben, *et al.* (2019) found that increases in social media use predicted decreases in well-being for females, but these effects were very small, and they concluded that the association between

social media use among adolescents and well-being is more nuanced than previously assumed.

In another study, Orben and Przybylski (2019) found a small negative association between use of digital technologies and adolescent well-being, but also that other factors (such as bullying, lack of sleep) have much more substantial effects on well-being. Use of digital technologies may as such have significant effects, but these are “so minimal that they hold little practical value” [1].

An important limitation of the literature on technology use and well-being is the scarcity of studies that convey how youth experience their technology use (Schønning, *et al.*, 2020). Associations between time spent online, mental health, and well-being are likely multifaceted (Orben and Przybylski, 2019). We therefore combine analyses of open-ended questions (free-text answers) and closed-ended questions from a survey to contribute to a richer understanding of young people’s positive and negative experiences with Internet use during lockdown.

Social support

Social support is crucial for well-being (Cobb, 1976) and can be defined as “support accessible to an individual through social ties to other individuals, groups, and the larger community” [2]. Social support is particularly important for people in their late teens through their twenties, when youth typically experience increased independence by moving away from home (Arnett, 2000).

Young people rely heavily on the Internet for social support (Brandtzaeg, *et al.*, 2021). A recent review by Odgers and Jensen (2020) indicated that online support can be useful “to support the ‘traditional’ tasks of offline friendships through arranging meetups, developing intimacy, and shows of affection” [3].

The Internet also enables access to social support independent of time and space and may encourage weak-tie connections (Ellison, *et al.*, 2007). Such connections result in better access to a diversity of people, information, and experts (Wellman and Hampton, 1999). Easy access to weak ties may explain why young people turn to social media for support and advice related to mental health symptoms (Pretorius, *et al.*, 2019) and for emotional support (Rideout and Fox, 2018).

Social support can be considered the negation of social isolation and loneliness. Thus, loneliness is viewed as the perception of a lack of networks and social support (Brandtzaeg, 2012). A decade ago, Turkle (2011) concluded that our social preferences are evolving to include and, in some cases, favor technology over people and off-line sociability, in effect leading to loneliness. Turkle’s (2011) account is positioned within the displacement hypothesis, arguing that people displace off-line forms of interacting with lower-commitment online interactions (Nowland, *et al.*, 2018).

On the other hand, online social interactions may reduce loneliness by providing opportunities to connect with people (Gentina and Chen, 2019), which may enhance social relationships (Ellison, *et al.*, 2007). Both accounts likely depict the impact of online interactions on loneliness, yet associations are dynamic and depend on how online means of communication are used (Nowland, *et al.*, 2018).

Displacement of off-line interactions and increased feelings of loneliness have been found among young people during the pandemic (*e.g.*, Cao, *et al.*, 2020; Konstantopoulou and Raikou, 2020; Wickens, *et al.*, 2021). Higher rates of loneliness among young adults may be due to a reduction in social interactions during lockdown and social-restriction orders (Wickens, *et al.*, 2021). Increased feelings of loneliness are also found when people engage in solitary consumption of content on social media (Ellison, *et al.*, 2007) and when people go online to escape the off-line social world (Nowland, *et al.*, 2018). Conversely, users interacting both online and off-line seem to experience social support positively, a tendency also found among gamers (Jones, *et al.*, 2014; Trepte, *et al.*, 2012).

The increasing use of online media has been connected to a change in how social relationships are created, mediated, and maintained (*e.g.*, Ellison, *et al.*, 2007; Vitak and Ellison, 2013). Recent advances in technology development of features that incorporate novel modalities of interaction, mobility, and immediacy (*e.g.*, FaceTime, Facebook Live, Discord), have been shown to support a greater sense of shared presence or a feeling of social proximity (Skjuve and Brandtzaeg, 2020).

For young people, in particular, online technologies enable immediacy, reach, and communication in real time for “staying in touch” (Simpson, 2020). Hence, during a lockdown situation, online communication could be expected to alleviate feelings of loneliness by enabling people to keep physical distancing without social distancing (Kumar, 2020; Wiederhold, 2020). Yet there is still a need for research about the experiences and implications of Internet use among young people during lockdown.

Research questions

There are several shortcomings in the research literature. First, there is a lack of in-depth knowledge regarding the role of the Internet during the COVID-19 pandemic among young people. Second, there is a need to capture young people’s own experiences of Internet use and well-being. Therefore, we raise the following research questions:

RQ1: What are the key characteristics of Internet use by young people during lockdown?
RQ2: How do young people in lockdown portray the positive and negative experiences of using the Internet?
RQ3: How do age, gender, patterns of Internet use, and social life relate to self-reported well-being during lockdown?

Methods

Data collection

We applied a Web-based self-reported questionnaire targeting a sample of young users in emerging adulthood. We used questions with pre-categorized response options as well as open-ended questions. The data collection from 734 young people was conducted by the user-research firm Ipsos Norway during the first two weeks of May 2020. The participants in our study had experienced lockdown since 12 March 2020, with closed shops, restaurants, fitness centers, libraries, museums, cinemas and other cultural, educational and entertainment venues, including schools and universities.

Ipsos Norway compensated the panelists with a points system depending on the interview length. As younger people are harder to reach in online surveys, they were invited to be part of a drawing for three gift cards comparable in value to US\$100. The survey was executed according to European privacy law — the General Data Protection Regulation.

To validate the questionnaire, five young people in the target group served as pilot users during April 2020, responding to two versions of the survey to check the time taken and the clarity of survey questions. The pilot respondents found the questionnaire too long and tedious. Consequently, eight of the original questions were discarded. Fewer items made the data more reliable, and we may have avoided participation fatigue.

The sample

The sample ($N = 734$), described in [Table 1](#), is representative of the online population in Norway in the 16-to-26-year age group in terms of gender, geography, and education.

The survey was conducted via Ipsos' online panel, which has approximately 80,000 participants, and through an interview via text messages (31 percent) using

computer-assisted telephone interviewing (CATI) with the population sample (the same type of sample chosen for ordinary telephone surveys). The response rate in the panel was approximately 10 percent, while the response rate in the CATI sample was approximately six percent (this is in line with the regular response rate to other CATI-based surveys).

Table 1: Sample demographics (N = 734).

Gender	
Female	50%
Age	
Mean age/SD	20.3/3.3
Education	
Primary school	19%
Upper secondary school	57%
Higher education less than four years	17%
Higher education four years or more	7%

Measures

In addition to sociodemographic factors of age, gender and education, the questionnaire consisted of 18 questions covering the use of online digital media, time spent online, online social support, off-line communication with friends, loneliness and well-being. We also included two open-ended questions to which the participants responded in free text, using their own words. The first concerned positive experiences of Internet use during the pandemic. The participants were asked: “Can you mention one or two things that you have experienced as positive with your Internet use during the COVID-19 period?” The second question concerned negative experiences of Internet use during COVID-19.

The design of the two open-ended questions was motivated by the critical incident technique (CIT), an approach to data collection with roots in the field of psychology. Using CIT, researchers collect participants’ stories about salient incidents during their exposure to a particular phenomenon, helping the study participants to understand the factors that are important in driving their experiences. This technique may provide rich insight into characteristics determining the user experience (Følstad and Brandtzaeg, 2020).

Online usage and social importance: We measured respondents' increased reliance on digital media during the lockdown period compared to before the lockdown period by asking whether they used various online spaces less or more during the lockdown period (six-point scale ranging from 1 = *do not use* to 6 = *use much more*). The services listed in the study included text/photo/video-sharing sites (e.g., Facebook, Instagram, TikTok, YouTube, Snapchat), text communication (e.g., SMS, e-mail), video calls (e.g., Zoom, Skype, Facebook Live, FaceTime), gaming, and messaging/chat services (e.g., Messenger, Discord).

Respondents were asked which of the same services had been important for keeping in touch with friends and acquaintances during the last 30 days. They were also asked about the extent to which social media and messaging services had been important for keeping in touch with friends and family during the lockdown (five-point scale ranging from 1 = *not at all important* to 5 = *very important*).

Time online: Participants were asked to report approximately how many hours they spent online during a regular day during the lockdown.

Online social support: We measured online support using 10 items based on the online social support scale (Nick, *et al.*, 2018), measuring three subtypes of online support: (1) emotional support, (2) social companionship support, and (3) informational support. All items were measured using a four-point scale ranging from 1 = *never* to 4 = *often*.

Off-line communication with friends and acquaintances: We measured the extent to which respondents had spent less or more time with friends (face to face) during the last 30 days (five-point scale, ranging from 1 = *much less than before* to 5 = *much more than before*).

Loneliness: We measured loneliness with the question: "Do you sometimes experience loneliness?" The response options were "Yes, one or more times a week," "One or more times a month," and "No, never." Responses of *weekly* or *monthly* were counted as being lonely. This single-item question has been used in several surveys, including in living-conditions surveys in Norway (Thorsen and Clausen, 2009). We also asked the participants whether they experienced feeling less lonely or lonelier during the lockdown period (five-point scale ranging from 1 = *much less lonely than before* to 5 = *much lonelier than before*).

Well-being: We used a validated single-item life-satisfaction measure among adolescents (Jovanović, 2016), which used a scale from 0 = *not satisfied at all* to 10 = *very satisfied* to rate perceived well-being. To compare participants' subjective well-being before and after lockdown, we used the same item twice but asked the respondents to consider different points in time: before the lockdown (retrospectively) and during lockdown (the last 30 days).

Analysis

To address *RQ1*, we ran descriptive univariate analyses to reveal Internet-usage patterns during the lockdown.

To explore *RQ2*, we analyzed responses to our two open-ended questions through a thematic analysis. A set of codes was identified based on the themes emerging in the data related to negative and positive experiences of Internet usage concerning mental and physical well-being as well as social support. The final themes described the most important experiences for understanding the role of the Internet for young people during lockdown.

One of the researchers coded the comments to the open-ended questions. For reliability, the coder followed Krefting's (1991) recommendation of a minimum of a two-week interval between the first coding and the recoding of the complete sample. Cohen's kappa was set to .97, and the percentage agreement was 98 percent. Thus, the intra-rater reliability was acceptable.

To respond to *RQ3*, we used a multinomial logistic regression analysis to investigate well-being as an outcome variable potentially predicted by sociodemographic variables, patterns of socializing and online usage. Respondents who reported a score toward the lower end of the well-being scale (0, 1, 2, 3, 4) were recoded as part of the low well-being group ($N = 259$), while those who reported a score toward the higher end of the well-being scale (6, 7, 8, 9, 10) were in the high well-being group ($N = 366$). Those who scored 5 on the scale were recoded as neither high nor low well-being ($N = 109$).

Predictor variables in multinomial logistic regression can be categorical or continuous. In our model, we had two continuous variables: *age* and *time spent online*. We also treated the online social support construct as a continuous variable (min = 0; max = 40; mean = 22.7; SD = 8.57). We had three categorical predictors: gender, experiences of loneliness during lockdown and off-line socializing. The latter two variables were dichotomized for the analysis. Respondents who reported feeling a little more or much lonelier were recoded as feeling lonelier ($N = 403$), with remaining respondents recoded as *lower or same level of loneliness*.

Results

We start with descriptive statistics concerning the key characteristics of Internet use by young people during lockdown. Second, we present the analysis from the two open-ended questions on negative and positive experiences of Internet use. Finally, we present the results from the statistical analysis on associations between Internet use, gender, age and well-being.

Descriptive results — Internet use during lockdown

Respondents reported spending an average of 7.4 hours online during a regular lockdown day (SD = 3.66). Males reported a higher number of hours online on average than females. As many as 34 percent of males reported that they more than 10 hours a day on the Internet, compared to 20 percent of the females.

Respondents overall reported spending more time on online media compared to pre-COVID-19, as shown in [Table 2](#). In particular, a majority of respondents used video calls and video/film-streaming services more than before the pandemic.

Table 2: During the COVID-19 lockdown, did you spend more or less time on the following services? (N = 734).

Note: For the purpose of readability, we have combined much more and more into “more than before” and much less and less into “less than before.”

	More than before	About the same	Less than before	Don't use
Video-calls	71%	12%	3%	15%
Video/film streaming	68%	22%	4%	5%
YouTube	59%	29%	4%	8%
Instagram	59%	25%	5%	12%
Snapchat	57%	31%	5%	6%
Gaming	55%	21%	3%	21%
Facebook	43%	41%	6%	11%
TikTok	40%	8%	2%	49%
Messenger	36%	51%	8%	5%
E-mail	28%	56%	5%	11%
Text-messages	23%	66%	5%	6%
Discord	20%	11%	3%	66%

Chatbots	3%	12%	0%	85%
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We also examined which of these services were considered important for keeping in touch with friends during the last 30 days. [Figure 1](#) suggests that Snapchat, Messenger and video calls were the three most frequently mentioned services of social importance. Seventy-six percent of respondents reported that social media and messaging services in general had been important or very important for keeping in touch with friends and family during the lockdown period, while TikTok and YouTube were less relevant for this purpose.

Figure 1: Which of the following services were important for you to keep in touch with friends during the last 30 days? Percentage shares among all respondents ($N=734$).

However, there were some notable gender differences: While females reported to use video calls (*e.g.*, FaceTime) to a greater extent than males (52 percent of the females compared to 31 percent of the males), males reported more gaming. Thirty-five percent of males stated that gaming had been important for to keep in touch, while only seven percent of females stated that this has been important to keep contact with their friends and family. Gaming may also be the reason for males spending more hours on average online.

[Figure 2](#) shows the percentage of respondents who often or sometimes experienced online social support. The majority often or sometimes had fun with others online (80 percent), got useful information from others (76 percent), and experienced getting support (66 percent) and advice (64 percent) online. Most respondents were careful not to share problems online, yet when they did, most received help from others. The relatively lower share of respondents reporting receiving positive attention (in the form of hearts/likes) might point to issues regarding “popularity metrics,” with youths comparing the confirmation they receive with what others receive.

Figure 2: Percentage shares of participants who have answered often or sometimes on the online social support items ($N=734$).

Results from open-ended questions — Positive and negative experiences of the Internet

To respond to *RQ2*, we identified seven main themes with 13 categories reflecting the most common experiences among the 1,146 responses to the two open-ended questions. Seventy-three percent of the sample replied to the open question about positive experiences with Internet use during the pandemic (536 comments). Eighty-three percent replied to the question about negative experiences (610 comments).

Positive experiences: The majority of the responding participants (66 percent) reported online social support, such as communication with friends and family (35 percent) and information and learning support (31 percent), to be the main positive experience of using the Internet during the pandemic. These participants highlighted the ease and convenience of using online communication tools and the fact that people also had time to chat and respond to them during lockdown. The second positive experience (15 percent) was that the Internet was an arena for activity and entertainment such as, streaming and gaming. Finally, six percent commented that the Internet helped them be more efficient and productive. Example quotes for each category are included in [Table 3](#).

Table 3: Coding categories for positive experiences of Internet use, including descriptions, example quotes and relative frequencies (N = 536).			
Theme	Category	Example quotes	Frequencies
Online support	Communication with friends and family	“Keep in touch with family and friends” (P400) “Easier to get in touch with people” (P418)	35 percent
	Information and learning support	“I spend more time cultivating my hobbies and learning new techniques	31 percent

		online than ever before” (P120) “It’s easy to be updated about the coronavirus and to know what to do” (P37)	
Activity and efficiency	Activity through streaming and gaming	“The possibility to watch series that I have been looking forward to seeing” (P220) “Something to do when you get bored” (P227)	15 percent
	Efficiency in terms of doing tasks faster	“Work better with school online” (P131) “I get time to do a lot of school” (P123)	6 percent
Other	Participants who reported various experiences, including “don’t know”	“I have become more aware of maintaining healthy habits, not spending too much time in front of a screen, focusing on	14 percent

		other things that are important in life” (P124)	
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Negative experiences: Thirty-eight percent of participants reported *lack of mental well-being* as the most negative experience related to online use. These experiences were related to a various spectrum of descriptions, such as lack of concentration (12 percent), loneliness (12 percent), depression and stress (8 percent), and boredom (6 percent). Respondents portrayed how the Internet made it difficult to concentrate on school and other things. Communication with friends and family online was described by some as *demotivating* and a *lonely, alienating experience*. Participants who reported depression and stress pointed to news content that made them feel low as well as the feeling of pointlessly scrolling online among other meaningless online activities.

Lowered physical well-being when using the Internet was reported by 17 percent of the participants. They mentioned issues such as headache, eyestrain, back pain and sleeping problems due to overuse of the Internet. Lastly, 34 percent commented that they were troubled by spending too much time online, reporting perceptions of *waste of time* and *unnecessary use*. Example quotes for each category are included in [Table 4](#).

Table 4: Coding categories for negative experiences of Internet use, including descriptions, example quotes and frequencies (N = 610).			
Theme	Category	Example quotes	Frequencies
Lack of mental well-being	Lack of concentration, unfocused, procrastination	“Take focus away from my studies” (P543) “A lot of time is spent on meaningless scrolling” (P499)	12 percent
	Loneliness, social distancing	“A little demotivating to just meet	12 percent

		<p>friends online. After a video call, when everyone has hung up, it feels lonelier than before the call” (P466)</p> <p>“Do not make up for face-to-face interaction” (P414)</p>	
	Depressed, scared and stressed	<p>“Depression due to too much pointless scrolling” (P371)</p> <p>“Has been a little intimidated by large amounts of scary news” (P132)</p>	8 percent
	Boredom	<p>“The days are often boring” (P61)</p> <p>“Social media is starting to be associated with boredom for me because I have ‘seen it all’” (P268)</p>	6 percent
Lack of physical well-being	Pain (headache, eyestrain, back pain, and sleeping problems)	<p>“Back pain and sore eyes” (P9)</p> <p>“My eyes hurt since I’m so much on my cell</p>	9 percent

		phone” (P350)	
	Physical inactivity, still sitting	“Little physical activity, restless” (P181) “Forget to go out to do things in nature” (P128)	8 percent
Problematic use	Excessive online use and addiction	“Too much screen time, gets headache” (P126) “Has much higher Internet usage than what is justifiable” (P135)	18 percent
	More use, more time spent on the Internet	“With school and social life online, screen time becomes too long” (P192) “More free time results in unnecessary use of social media” (P201)	16 percent
Other	Various issues such as bad Internet connections, etc.	“People who think COVID-19 is a bluff” (P93) “Confusing school days” (P398)	10 percent

Results from multinomial logistic regression — Internet use and well-being

To respond to *RQ3*, we investigated how well-being is associated with background variables, patterns of socializing and patterns of online behavior and support during lockdown. [Table 5](#) shows the results from the multinomial regression analysis.

Table 5: Multinomial logistic regression of categories for well-being during lockdown.						
Note. B = Unstandardized regression coefficient; SE = Standard error; OR = odds ratio; CI = confidence interval for OR; OSS = online social support. *** $p < .001$ ** $p < .01$. * $p < .05$						
	Reference category: High well-being during lockdown (N = 366)					
	Neither nor (N = 109)			Low well-being (N = 259)		
	B (SE)	OR	95 percent CI	B (SE)	OR	95 percent CI
Intercept	-.91 (.92)			-3.3 (.73)		
Age (continuous)	-.02 (.04)	.98	(.911.05)	.07 (.03)	1.07*	(1.021.13)
Gender: female	.58 (.25)	1.78*	(1.102.88)	.47 (.19)	1.60*	(1.102.34)
Time online (continuous)	-.02 (.04)	.98	(.921.06)	.09 (.03)	1.09**	(1.041.15)
OSS (continuous)	-.03 (.01)	.97*	(.94.99)	-.03 (.01)	.98*	(.95.99)
Loneliness: more	.83 (.24)	2.58**	(1.423.68)	1.40 (.20)	4.06***	(2.765.97)
With friends: much less	.27 (.25)	1.31	(.812.14)	.57 (.20)	1.76**	(1.192.62)
Model X^2 (df)	111.01 (12)***					
R^2 (Nagelkerke)	.17					
R^2 (Cox and Snell)	.15					

Age and gender significantly predict level of well-being. Older age is positively associated with reporting low well-being compared to high well-being, and females are 1.6 times more likely than males to report low well-being.

Time spent online and online social support significantly predict well-being. For every hour of time spent online, the likelihood of reporting low well-being increases. The effect of online social support is modest: for each unit of increase in online social support, the likelihood of reporting low well-being decreases.

Whether respondents report to feel lonelier during the COVID-19 lockdown compared to before accounts for the largest variability in well-being. The change in odds of reporting low well-being is more than four times higher for those who reported to feel lonelier compared to those who did not report to feel lonelier during the lockdown. Finally, having spent much less time with friends (face to face) positively predicts low well-being.

Discussion

Independent of the COVID-19 situation, young people's social support and well-being are key concerns often raised about the impacts of digital life (*e.g.*, Gentina and Chen, 2019; Orben, *et al.*, 2019; Nowland, *et al.*, 2018). The present study gives insights into how young people experienced their use of the Internet during the pandemic and how it has affected their well-being and social support.

Increasing Internet use and video-based online support

Our data confirm observations of the increasing use of the Internet during the pandemic which is reflected both in time spent online and the increased use of digital means for staying connected. Respondents in our study reported spending an average of 7.4 hours online during a regular lockdown day or 51.8 hours online during a seven-day week. This finding reflects how people's off-line lives were restricted.

Similar to other research before the pandemic, we found that young people engage with multiple social media platforms (Brandtzæg, 2012; Odgers and Jensen, 2020). However, Snapchat and Messenger were the most important online services for keeping in touch with friends (see [Figure 1](#)). This supports a trend toward the use and preferences for more-private messaging services, certainly among younger media users (Bailey, *et al.*, 2016). Many participants also reported that friends and peers had more time to chat and socialize online.

New features such as video calls provided an essential way to keep in touch with friends and family, creating a new space for social support. Forty-one percent, mostly females, of our sample reported that video calls were important to keep in touch with friends during lockdown. An increase in video communication differs from patterns observed by early researchers examining computer-mediated communication (Schroeder and Sims, 2018), particularly among young adults (Bailey, *et al.*, 2016), which have mainly focused on text-based communication.

Social restrictions may partly explain this shift toward video-based communication. Recently, there has also been an increasing availability of easy-to-use video functionality in services such as FaceTime, Facebook Live, Snapchat and Messenger. Hence, while traditional social media are popular, it seems that young people also want to see each other live. Social interactions may increasingly shift to “live” face-to-screen.

The responses to the open questions demonstrate the need for social interactions and support through video. Many experienced video calls as a fun and immediate way to keep in touch with friends and family. Recent research has also suggested that live video communication supports a greater sense of social proximity (Skjuve and Brandtzaeg, 2020) and that youths achieve more emotional closeness through video communication than via text (Sherman, *et al.*, 2013).

However, some participants found video communication alienating, lonely and a bit sad. Online communication, even via video, cannot compensate for a normal social life. The lockdown may have amplified the continual co-presence of online and off-line social spaces. Yet while young people typically are online even when they spend time together offline, during the lockdown those off-line contexts excluded significant peers.

Online social support and well-being

In our statistical analysis, online social support significantly predicted well-being, although the effect was small. Thus, while young people’s constant connectivity has led to concerns about the negative effects (Odgers and Jensen, 2020), the Internet also enables access to social support independent of time and space (Ellison, *et al.*, 2007). Often with immediacy, reach, and communication in real time for “staying in touch” (Simpson, 2020).

The importance of immediate online support was also highlighted in the free-text responses. Findings indicate that the Internet can support needs for socialization, information, and resources in a disrupted life situation, such as the pandemic.

Online technologies, such as gaming and social media, have additionally helped some young people to stay in touch with existing networks during the pandemic, and hence the resulting online social support has possibly enhanced their well-

being. This finding is similar to evidence found before the pandemic in a review by Odgers and Jensen (2020).

However, despite the importance of online social support, our study signals how important off-line sociability is for a generation whose social lives are often considered to be primarily digitally mediated.

Internet use and well-being

Our data show the negative psychosocial consequences of the lockdown, with respondents reporting to be lonelier and have a lower well-being (see also Brooks, *et al.*, 2020; Cao, *et al.*, 2020; Cellini, *et al.*, 2020; Konstantopoulou and Raikou, 2020). In the statistical analysis, more time spent online during a regular lockdown day significantly predicted low well-being.

The responses to the open questions likewise highlighted issues with mental and physical well-being connected to Internet use. A majority of our sample voiced concern of too much time online and that their online activity was less organized. Many reported lack of exercise, stress, concentration challenges, loneliness, body pain and problems related to sleep due to too much Internet use. Excessive use interfered with normal functioning and well-being, such as with sleep, physical activity, concentration and school performance.

Evidence found before COVID-19 also indicated excessive use to be associated with social, mental and physical impairments (Helsper and Smahel, 2020), such as depression and anxiety (Primack, *et al.*, 2017), lowered life satisfaction (Boniel-Nissim, *et al.*, 2015), and lowered attention (Shensa, *et al.*, 2018).

However, based on our free-text responses, lowered well-being is perhaps not related to excessive Internet use *per se* but rather to how time online is spent. An experience of meaningless online activity, such as the feeling of “pointlessly scrolling” and online procrastination, seems to be associated with lowered mental well-being. Having a sense of purpose is important for well-being (Huppert, 2009). In research on well-being, meaning and purpose are considered increasingly important (Steger, 2018), but such associations are rarely examined in studies on media use and well-being.

Online experiences fueled by algorithms and design encourage users to continue their online use even after the original activity is completed. Internet users describe the time spent as empty or gone (Ytre-Arne, *et al.*, 2020). Hence, the ubiquitous nature of the Internet may have an increasingly prominent role as a source of distraction and frustration in everyday life.

Females lonelier online than males

According to Odgers and Jensen (2020), it is important to identify whom and under what circumstances online usage may amplify or reduce risk. Our study indicates that older females who spent more time online than their peers were more likely to report low well-being (see also Gómez, *et al.*, 2017; Orben, *et al.*, 2019). A reason could be that females may be more vulnerable to psychological distress than males (Zhang, *et al.*, 2018). A recent study found that women had greater odds of loneliness during the pandemic than men among those aged 18-29 years (Wickens, *et al.*, 2021). Females were also more frequent users of Instagram, which is associated with poor body image and negative feelings (Fardouly, *et al.*, 2018).

The differences between females and males regarding well-being could also relate to the gamer communities, to which many young males belong, such as Discord and Steam. Our results also confirm that males are more into gaming for social meaningful interactions, while females use visual communication media, such as video calls and Instagram. In comparison to video calls and Instagram, online games remove your physical identity. Gaming has also been promoted as a positive activity during the pandemic through the worldwide campaign #PlayApartTogether (King, *et al.*, 2020) creating a platform for enjoyment and socializing. For this reason, gaming may have contributed to a meaningful social online experience.

Conclusion

In conclusion, this study is, to our knowledge, the first to examine Internet use among young people during the pandemic in a representative way, employing both open-ended questions and traditional survey items. In doing so, we address a timely research topic and provide rich and unique data on how to understand young people's online lives during the pandemic and, in particular, how the Internet affects social support and physical and mental well-being.

Our study indicates that Internet use and online communication play important social and informational roles for young people during lockdown, and such communication increasingly includes live video-based interactions (*e.g.*, FaceTime). However, it appears that online interactions cannot compensate for the critical role offline social activities play among youths.

Our findings also point to the negative sides of excessive Internet use, showing that many young people report poor mental and physical well-being caused by the Internet. Pointless excessive Internet use and online procrastination are perceived to interfere with normal well-being, such as with sleep, physical activity and school performance. In addition, overuse of the Internet may create physical pains such as eyestrain, back pain and headache. These negative effects point to the need to

encourage balanced approaches to Internet use. Yet there are individual differences, and rather than excessive Internet use *per se*, meaningful online experiences emerge as central to users' perceptions of well-being.

There are a number of limitations to this study. First, our cross-sectional survey does not allow us to make causal claims. However, an important strength of our study is that we combined traditional survey questions with open free-text questions, enabling richer insights into the consequences of Internet use. While some open-ended comments might have been influenced by the closed questions in the survey, we still recommend a complementary approach in future studies to reveal the multifaceted implications of Internet use.

A second limitation concerns how our measure of online support could have covered more dimensions. Social support is often understood in different categories, such as appraisal support, instrumental support, and informational and emotional support (Brandtzaeg, *et al.*, 2021). Our study focused on the two latter dimensions, mainly due to the feedback from our piloting respondents, who recommended shortening the questionnaire.

Third, the lockdown setting of this study may be difficult to replicate in future research, as the current pandemic might see an end. Nevertheless, the available evidence from the current study may help build knowledge about the social implications when tackling future pandemics. The lockdown also allowed us to examine how young people are affected by technologies when they have few options for socializing other than spending time online.

With these limitations in mind, this article contributes insights into multifaceted relationships between Internet use and well-being. One lesson of our analyses is that research should go beyond excessive online use *per se* and rather focus on the level of meaningful online experiences in relation to well-being.

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Notes

[1.](#) Orben and Przybylski, 2019, p. 178.

[2.](#) Lin, *et al.*, 1979, p. 109.

[3.](#) Odgers and Jensen, 2020, p. 339.

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Young people’s use and experience of the Internet during the COVID-19 lockdown: Well-being and social support

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