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Cordula Nitsch, Susanne Kinnebrock

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"I Urgently Need Your Advice"—Digital Stress Experiences and Social Support in Online Forums

CORDULA NITSCH[1]
SUSANNE KINNEBROCK
University of Augsburg, Germany

One downside of digitalization is the digital stress that stems from widespread information and communication technologies (ICTs). Previous studies on digital stress have pointed to several ICT-related stressors. However, less is known about how digital stress takes shape in people's lives and which interventions are perceived to be helpful. We conducted a qualitative content analysis of 50 threads (523 posts) on contemporary digital stress experiences in people's professional and private lives. Results show that digital stress was mostly caused by other people's ICT use—not the thread creator's own use—and often involved interpersonal conflicts. In the professional context, digital stress experiences were mostly related to (expected) permanent availability; in the private context, they referred to the communication behavior of others. In response, informational support (i.e., coping recommendations) clearly outweighed emotional support. Overall, our findings demonstrate that digital stress is more than just an intrapersonal psychological stress reaction caused by digital technologies. It is, namely, a social phenomenon that calls for a broader conceptualization of the traditionally psychological concept of stress.

Keywords: digital stress, online forums, interpersonal communication, stressors, social support, emotional support, informational support, coping, qualitative content analysis

Being "permanently online, permanently connected" (Vorderer, Hefner, Reinecke, & Klimmt, 2018) has become a matter of course to large parts of the population around the globe. Permanent access to the Internet for information, communication, and entertainment has numerous advantages and helps make our daily lives easier. The omnipresence of digital devices and applications, however, also has downsides. For example, the manifold demands associated with information and communication technology (ICT) can cause stress and impair people's health and well-being. Digital stress occurs whenever demands originating from the use (or mere presence) of digital ICT tax or exceed people's coping resources (e.g., Freytag et al., 2021; Reinecke et al., 2017).

Cordula Nitsch: cordula.nitsch@dw.com
Susanne Kinnebrock: susanne.kinnebrock@phil.uni-augsburg.de
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Scholars have investigated digital stress in both people's professional (e.g., Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008; Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2011) and private lives (e.g., Lee, Chang, Lin, & Cheng, 2014; Reinecke et al., 2017; Weinstein & Selman, 2016). Such research typically relies on standardized surveys and focuses on identifying ICT-related stressors. Less is known, however, about individual experiences and perceptions of digital stress, about differences between digital stress in professional and private life, and about individuals' handling of digital stress situations. In our study, we address these aspects of digital stress, focusing on how digital stress takes shape in people's lives and which interventions and coping strategies are perceived to be helpful with timely digital stresses. We employed an individual-centered perspective on digital stress and conducted a qualitative content analysis of online forum discussions in which we considered digital stress experiences in both professional and private contexts. Online forums offer the possibility of anonymously seeking help and advice for countless problems, and many studies have highlighted online forums' social support functions (e.g., Eriksson & Salzman-Erikson, 2013; Menke, Wagner, & Kinnebrock, 2020; Wang, Zhao, & Street, 2017). Due to the anonymity of online forums, people feel more comfortable discussing their problems and tend to self-disclose more than in face-to-face situations (e.g., Suler, 2004; Wood & Smith, 2001). Furthermore, they report their problems on their own initiative. Due to these specifics of online communication, descriptions of digital stress experiences in online forums may provide different insights into individual experiences and perceptions of stressful situations than surveys in which people must respond to preformulated questions. Similarly, online forum discussions on digital stress allow for analyzing people's ideas on how to deal with such stress situations because social support provided by the forum participants can, inter alia, disclose which coping strategies are perceived as adequate. Instead of considering only one element of digital stress, our analysis of interpersonal communication on digital stress in online forums examines (a) the described stress experiences in different life contexts (professional and private) and (b) the social support provided in response to the respective stress experiences.

Our article begins with an overview of research on the stress caused by ICT and introduces relevant constructs related to stress (e.g., stressors, coping strategies). We then focus on the concept of social support and show why online forums are suitable platforms for seeking and providing such support. The following sections present our study's methodological approach and the results of the qualitative content analysis of forum discussions on digital stress experiences. In the final section, we discuss our findings and demonstrate the value of analyzing interpersonal communication on digital stress in online forums.

Digital Stress

According to the transactional model of stress, stress refers to a person-environment relationship "that the person appraises as significant for his or her well-being and in which the demands tax or exceed available coping resources" (Lazarus & Folkman, 1986, p. 63). The model describes two forms of appraisal (Lazarus & Folkman, 1984a, pp. 31–37): Individuals assess whether a specific situation poses a threat to their personal well-being (primary appraisal) and whether sufficient coping resources are available (secondary appraisal). In the model, coping resources are conceptualized as either emotion-focused or problem-focused strategies. Whereas emotion-focused coping aims to change or regulate emotional responses to stressful situations, problem-focused coping aims to solve the problem—that is, to change the situation itself (Lazarus & Folkman, 1984a, pp. 150–155).

When adapting this model to the digital world with its manifold ICT-related demands, researchers commonly use the terms "technostress" (e.g., Lee et al., 2014; Schmidt, Frank, & Gimpel, 2021; Tarafdar et al., 2011) or "digital stress" (e.g., Hall, Steele, Christofferson, & Mihailova, 2021; Hefner & Vorderer, 2016; Kinnebrock & Nitsch, 2020; Nitsch & Kinnebrock, 2021). Such stress is usually connected to an individual's use of ICT. However, it can also be caused by other people's ICT use (e.g., the technical incompetence of colleagues, cyberbullying) or the mere presence of ICT in contemporary life (e.g., fear of job loss due to technical advances or constant thoughts about online communication). In our study, we explicitly consider all three triggers of digital stress equally. We apply a broad definition of digital stress that comprises stress situations arising from (a) one's own ICT use, (b) other people's ICT use, and (c) the mere existence of ICT. The occurrence of digital stress depends on various influencing factors, such as individual characteristics (e.g., extent of stress resilience), the situational context (e.g., whether the individual has to simultaneously deal with other digital or analog stressors; Nitsch & Kinnebrock, 2021), and the coping resources at hand (e.g., technical skills, help from others). Therefore, whether, and to what extent, a situation is experienced as stressful differs not only from person to person but also for a single person at different points in time (see also Hefner & Vorderer, 2016).

Stress can substantially impair individuals' health and well-being—no matter whether it is caused by analog or digital demands. For example, stress is associated with sleep disturbances, concentration problems, depression, burnout, and anxiety (e.g., Bergdahl & Bergdahl, 2002; Reinecke et al., 2017). Due to the numerous negative consequences, it is not surprising that with increasing digitization, a broad stream of research is devoted to investigating the phenomenon of digital stress.

Research on ICT-related stress started in the early 1980s, when the introduction of computers to workplaces placed new demands on employees (e.g., Brod, 1982, 1984). Since the onset of digitalization, this research stream has expanded considerably. In addition to work-related digital stress (e.g., Ayyagari, Grover, & Purvis, 2011; Ragu-Nathan et al., 2008; Tarafdar, Tu, & Ragu-Nathan, 2010; Tarafdar et al., 2011), studies have increasingly included digital stress that results from private, voluntary ICT use (e.g., Freytag et al., 2021; Lee et al., 2014; Reinecke et al., 2017). Previous research has typically relied on standardized surveys and has identified numerous ICT-related stressors. Studies on work-related digital stress usually consider the following five "techno-stressors": overload, invasion, complexity, uncertainty, and insecurity (e.g., Ragu-Nathan et al., 2008; Tarafdar et al., 2010, 2011). Except for insecurity (i.e., fear of job loss due to technological advances), these stressors can also be adapted to the private use of digital media. The concept of overload refers to people's perceptions that ICT causes "too much" of something—for example, too much information (e.g., Ayyagari, 2012; Lee, Son, & Kim, 2016) or communication (e.g., Reinecke et al., 2017). Invasion describes the perception that ICT is omnipresent (e.g., permanent availability) and is blurring the boundaries between professional and private life. Complexity refers to people's perceived lack of competence in using technical tools, and uncertainty represents frequent ICT changes that require adaption and further training. The unreliability of digital devices (e.g., due to unstable and malfunctioning ICT) and media multitasking (i.e., the use of digital media while engaging in other activities; e.g., Reinecke et al., 2017; Tarafdar et al., 2011) are further stressors that apply to both professional and private ICT use.

Regarding private ICT use, additional stressors are mainly related to social media. Hall and colleagues (2021) identify five components of digital stress: availability stress, approval anxiety, fear of missing out, connection overload, and online vigilance (see also Steele, Hall, & Christofferson, 2020). The concept of online vigilance (Freytag et al., 2021; Reinecke et al., 2018) encompasses the following three dimensions: (a) individuals' constant thinking about online communication and content, (b) the perceived obligation to promptly react to incoming messages, and (c) permanent monitoring of online content and activities. Younger people, in particular, often experience stress due to the perceived need for permanent (positive) self-presentation on social media platforms and the possibility of negative social comparisons. Finally, cyberbullying—that is, personal attacks and public shaming in the digital sphere—constitutes an especially strong stressor (e.g., Weinstein & Selman, 2016).

In addition to studies devoted to the identification of ICT-related stressors, researchers have investigated the use and success of coping strategies for digital stress experiences (e.g., Beaudry & Pinsonneault, 2005; Li et al., 2019; Salo, Makkonen, & Hekkala, 2020; Schmidt et al., 2021; Weinstein et al., 2016). As with coping studies in general (Skinner, Edge, Altman, & Sherwood, 2003), such research employs the distinction between emotion-focused and problem-focused coping (Lazarus & Folkman, 1984a), but many researchers develop their own subcategories. In qualitative workshops with adolescents, Schmidt et al. (2021), for example, collected 30 coping strategies that were summarized under five dimensions: "Avoid Stressful ICT," "Follow the Rules," "Use ICT Consciously," "Contain Negative Emotions," and "Acquire ICT." The abundance of different category systems and foci (e.g., coping strategies of adolescents, adults, or managers; coping strategies for different underlying stressors, etc.) mirrors how large and diverse research activities on coping are.

Social Support in Online Forums

While coping can be understood as an internal process that describes how an individual deals with a stress situation, social support is provided by external sources (e.g., family members, friends, teachers, forum participants). However, social support and coping are related because "social support is beneficial to the extent that it promotes adaptive coping with stress" (Cutrona & Suhr, 1992, p. 155). Therefore, seeking social support and accepting advice can also be seen as a form of coping.

Social support can include many dimensions (e.g., informational, tangible, esteem, emotional, and social network support; Cutrona & Suhr, 1992). The optimal matching model (Cutrona, 1990; Cutrona & Russell, 1990) posits that, depending on the stress situation, different types of social support are more or less suitable. In controllable situations, action-facilitating support (e.g., information, tangible assistance) is more successful, whereas in uncontrollable situations (e.g., the death of a relative), nurturant support, such as emotional support and network support, is more appropriate for reducing emotions, such as grief and loneliness. This is also supposed to be true for coping strategies (e.g., Cutrona & Suhr, 1992): Problem-focused coping is particularly appropriate in controllable situations, and emotion-focused coping works best when the individual has no direct influence on changing the stressful situation. Applied to the phenomenon of digital stress, individuals' own use of digital media can be understood as a controllable situation, while the way in which other people use digital media constitutes an uncontrollable situation for the individual.

The concept of social support is well researched and has been successfully applied to online communication. Even though social support can generally entail more than two dimensions, online forums mostly provide informational and emotional support (Reifegerste, Wasgien, & Hagen, 2017). While emotional support focuses on the expression of understanding, empathy, compassion, affirmation, caring, and concern, informational support refers to sharing information, advice, and guidance on the topic at hand. Advice on how to deal with a certain situation—that is, coping recommendations—can thus be categorized as informational support (see Figure 1).

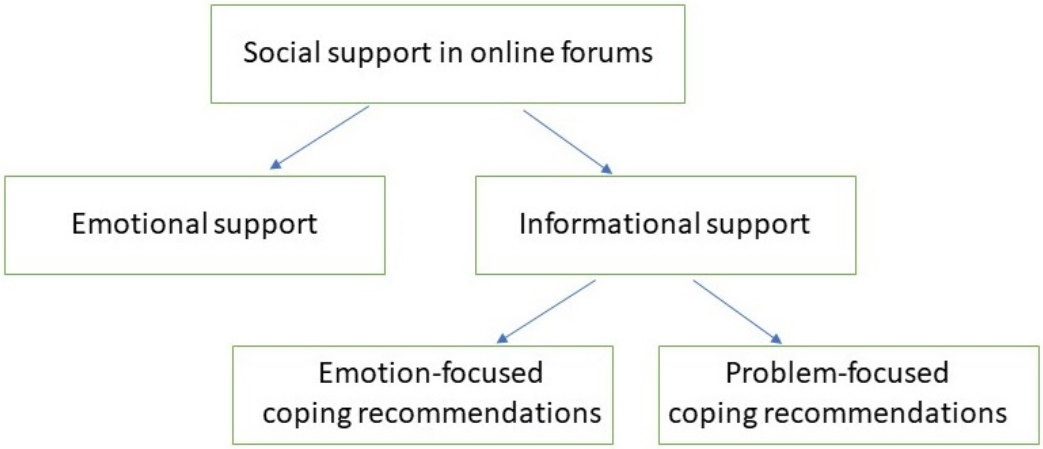

Figure 1. Conceptualization of social support in forum discussions on digital stress.

The countless studies that have examined social support in online forums have focused on a wide range of topics (e.g., military deployment; Desens, Kreps, & Su, 2019; racial discrimination; Hanasono & Yang, 2016; harassment in online gaming; McLean & Griffiths, 2019). Health-related issues account for a particularly large part of the existing research (e.g., Demjén, 2016; Haverfield, Leustek, & Timko, 2017; Menke et al., 2020; Rodriquez, 2013; Wang et al., 2017), and our analysis contributes to this body of research.

Communication in online forums has specific characteristics and advantages compared to face-to-face communication (e.g., Suler, 2004; Tanis, 2007; Walther & Boyd, 2002; Wright & Bell, 2003): online forums are asynchronous, allowing individuals to participate at any time that is convenient for them; they are text-based, potentially making it easier for individuals to reflect on their situations; and they guarantee anonymity because individuals can choose pseudonyms, allowing them to voice personal matters that they otherwise would not. Furthermore, they choose to report their problems on their own initiative.

Due to the specific characteristics of online forums (e.g., anonymity, targeted search for support, decision to report one's problem on one's own initiative), it can be assumed that people will report more authentically and honestly on their ICT-related stress experiences than in face-to-face communication and possibly more comprehensively than in a survey. Descriptions of digital stress experiences in online forums may thus provide deep insights into both individual perceptions of stressful situations and collective advice

on how to cope successfully with these situations. For the individual, self-disclosure in online forums can have therapeutic value and can be a first step in coping with a problem (e.g., Miller & Gergen, 1998).

So far, our knowledge of online communication on digital stress is limited to a project by Weinstein and colleagues: Weinstein and Selman (2016) analyzed adolescents' personal accounts of digital stress that were shared on MTV's platform A Thin Line (www.athinline.org). The authors identified six stressors: "mean and harassing personal attacks," "public shaming and humiliation," "impersonation," "feeling smothered," "pressure to comply with requests for access," and "breaking and entering into digital accounts and devices" (Weinstein & Selman, 2016, p. 398). Weinstein et al. (2016) further examined the coping recommendations given by peers to these adolescents. They found five coping strategies for ICT-related conflicts, as recommended by peers: "get help from others," "communicate directly," "cut ties," "ignore or avoid the situation," and "utilize digital solutions" (Weinstein et al., 2016, p. 424).

In our study, we follow Weinstein et al.'s (2016) approach to analyzing online communication on digital stress. However, we decided (a) to study a broader range of individuals that is not limited to adolescents and (b) to include digital stress experiences in both the work context and people's personal lives. This allows us to consider and compare digital stress situations as they are described in two different contexts: people's professional lives and personal lives. We pose three research questions to determine what posts in anonymous online forums reveal about people's experiences of digital stress. Our first research question relates to thread creators' stress experiences in relation to the central ICT-related stressors identified in standardized surveys:

RQ1: For what digital stress experiences do people seek help in anonymous online forums?

Our second research question refers to the different types of social support that can be provided to deal with digital stress experiences. By distinguishing between emotional and informational support, we follow the prevailing dichotomy in the literature on social support in online forums and subsume coping recommendations under informational support.

RQ2: What type of social support (emotional vs. informational) is provided in anonymous online forums for digital stress experiences?

Finally, we consider that digital stress can be experienced in different areas of life. We therefore compare forum discussions on digital stress in individuals' professional and private lives:

RQ3: What differences are there between online forum discussions on digital stress in professional and private contexts?

Method

To answer our research questions, we conducted a directed qualitative content analysis of online forum discussions on digital stress in professional and private contexts. According to Hsieh and Shannon (2005), a directed qualitative content analysis builds on prior research and aims to validate and/or extend

it (p. 1281). Therefore, the constructs of interest are deductively derived from the literature and serve as key categories for the initial coding scheme. In our study, key categories concern the stressors already identified in professional and private contexts, the distinction between emotional and informational support, and the distinction between emotion- and problem-focused coping strategies.

Sampling Process

The material was obtained using a three-step sampling process. The sampling involved (a) the selection of online forums and subforums, (b) the selection of threads, and (c) the selection of posts.

(a) As digital stress is not a defined disease pattern and specific forums on digital stress do not exist, we had to resort to forums covering a broad spectrum of topics. We collected the material in summer 2020 and selected two German online forums: med1.de (founded in 1999) and hilferuf.de (founded in 2003). At the time of our data collection, med1.de had approximately 523,045 members and accounted for over 970,000 threads with almost 26 million posts; hilferuf.de listed 79,366 members and almost 200,000 threads with 2.9 million posts. Overall, med.1.de focuses on health-related issues, while hilferuf.de concentrates on a wide variety of personal problems. We chose these forums because, despite their slightly differing foci, they both contained numerous subforums, including subforums on work-related and private topics that were relevant to our analysis. The two forums are also widely known and publicly accessible—that is, without being a member—which accounts for their wide reach. For the work context, we chose the two subforums: "profession, daily life and environment" (med1.de) and "profession" (hilferuf.de); for the private context, we selected the four subforums: "relationships" and "personal problems: I" (med1.de) as well as "love" and "friends" (hilferuf.de).

(b) The selection criterion for the threads was that the initial post had to report on a stress situation resulting from digital ICT. To ensure that the threads contained sufficient information on digital stress, the digital stress situation had to be a central topic in the initial post. We first screened the 50 latest threads on the six subforums for digital stress experiences, which resulted in the identification of eight relevant threads. We then searched the subforums for further threads using keywords related to digital devices and applications ("mobile phone," "smartphone," "computer," "software"; "technique," "Internet," "forum," "E-Mail," "WhatsApp," "Facebook," and "Instagram"). In doing so, we identified 76 further threads in the subforums. Of the total 84 identified threads (38 work-related, 46 private context), we randomly selected 25 threads for the work and the private context each.

(c) As the length of the threads differed substantially (ranging between 2 and 246 posts, $M = 34.2$, $SD = 51.17$), we limited the number of analyzed posts per thread to 16 (i.e., the initial post plus up to 15 subsequent posts). This was appropriate because thread screening showed that further posts mainly repeated what had already been written or that discussions completely veered away from the digital stress situation reported in the initial post.

The final sample comprised 50 thematically relevant threads, with a total of 523 posts published online between 2010 and 2020 (see Table 1). The posts were copied and pasted from the online forums to the qualitative data analysis (QDA) software f4analyse.

Table 1. Overview of the Material.

	Threads	**Posts**		
		Total		Analyzed
	N	*N*	*M (SD)*	*N*
Work context	25	666	26.6 *(39.72)*	254
med1.de	*7*			
hilferuf.de	*18*			
Private context	25	1,042	41.7 *(60.42)*	269
med1.de	*8*			
hilferuf.de	*17*			
Total	**50**	1,708	34.2 *(51.17)*	**523**

Coding Scheme and Coding Process

The coding scheme of the qualitative content analysis reflects the following two dimensions: "reported digital stress experience" (RQ1) and "provided social support" (RQ2). The main categories were deductively derived from previous research and addressed contexts of digital stress (professional vs. private), already identified stressors (e.g., overload, multitasking, unreliability), social support (emotional vs. informational), and coping strategies (emotion- vs. problem-focused).

In our analysis, we linked the two concepts of social support and coping. Thread creators received emotional support when forum participants expressed compassion, empathy, and understanding, and they received informational support when advised on how to deal with digital stress situations. Forum participants' coping recommendations (both emotion- and problem-focused) were thus considered synonymous with informational support.

The coding was done by two coders: the first author of this study and a student employed for the research project. First, both coders read the whole material to obtain an overview of the reported digital stress experiences and the social support provided. The analysis was carried out using the QDA software f4analyse. The main deductive categories drawn from the literature were coded, and subcategories were inductively introduced when new aspects emerged from the material (e.g., regenerative coping). After coding the whole material individually, the two coders then compared their category sets, discussed divergent choices, and subsequently combined their categories into one final coding scheme. Finally, the material was coded once more by the first author using the final coding scheme.

The analysis was carried out according to the three-stage procedure of material processing (material structuring, explication, and summary; Nawratil & Schönhagen, 2009).

Results

The presentation of the results follows the order of the aforementioned research questions. First, we present the findings on digital stress experiences reported in anonymous online forums (RQ1). Then, we

focus on the types of social support provided in people's replies to the initial posts (RQ2). Differences between digital stress in professional and private contexts (RQ3) are presented within the findings on stress experiences and social support. References to the stressors discussed in the previous section on digital stress are italicized.

Reported Digital Stress Experiences (RQ1)

In the 50 threads analyzed, thread creators described various digital stress experiences. Even though the stress situations differed strongly depending on the context—that is, whether the situations concerned individuals' professional or private lives—they shared a notable common feature: The stress experiences were caused primarily by other people's ICT use and often involved interpersonal conflicts.

In threads of professional context (expected), permanent availability due to digital devices was the dominant issue. Thread creators reported being regularly contacted by their superiors or colleagues outside office hours or while on sick leave. One thread creator described the behavior of her boss as follows:

> He calls me constantly after work and on the weekends, wants to know where to find documents xy or asks if I could finish something on the PC at home. If this would happen ONCE in a while, it wouldn't bother me, but it happens almost every day that he calls me, even in the evenings at 8 p.m., because it is so "urgent." (personal communication, June 2014)[2]

This and other quotes showed that, due to the omnipresence and permanent availability of digital devices, thread creators experienced severe intrusions of work into their private lives (invasion). They reported having problems switching off from work, panicking when their smartphones rang on their days off, and often fearing the loss of their jobs if they opposed the intrusion of work into their private lives (personal communication, October 2013, April 2020).

Other threads described stress experiences caused by communication overload due to the countless communication channels used at work (e.g., landline phones, mobile phones, WhatsApp groups, Outlook, Skype, WebEx, and MS Teams: personal communication, April 2020). They further highlighted that digital communication was highly time consuming, caused countless interruptions, and led to media multitasking (e.g., personal communication, June 2020).

Only a few threads addressed further digital stress situations. Single threads discussed the unreliability of technical devices, a perceived lack of digital competence in handling software programs (complexity), and data protection issues. One thread creator who worked in a call center reported being permanently monitored during her work:

> The permanent observation by various superiors (we have a kind of monitoring program for us employees on all PCs and telephones that always shows on a separate screen whether everyone is on the phone every second) . . . is no longer bearable for me. (personal communication, November 2012)

[2] All direct quotations of the analyzed material were translated from German into English by the authors.

In private life, digital stress mostly had to do with interpersonal communication via digital devices and concerned the communicative behavior of other people. Many thread creators were annoyed and distressed by unmet communication expectations, such as delayed or nonresponsive behavior (e.g., "he reads the messages immediately, but he does not answer them"; personal communication, June 2020). Such stress was aggravated if waiting for responses led to constant monitoring of online communication (e.g., at what time others have been online, whether they have posted content on social media channels, online vigilance). One thread creator described the feeling that real friendships suffered due to constant competition with countless virtual "friends":

> Also, through all these virtual platforms and contacts, everything has somehow become so non-committal, it seems to me. . . . If you used to have a handful of real friends and arranged to meet them in your free time or simply called them when you needed to talk to someone, had a problem, etc., you are now competing with HUNDREDS of other contacts your friends have in addition to yourself in their virtual world. (personal communication, September 2016)

Other thread creators pointed out that their friends or partners constantly looked at their smartphones or that they learned via social media things that they would have preferred to be told in person (e.g., pregnancy announcement on Instagram: personal communication, February 2020). Stress also occurred when friends or partners used social media platforms in a way that the thread creators did not agree with. Examples included threads about a wife who sent nude pictures to other men (personal communication, August 2019), a boyfriend who had a profile on Tinder (personal communication, June 2020), or a fiancée who blocked her partner on Facebook (personal communication, October 2015). Thread creators often related such behaviors to their partners' addiction to online validation: "He is like two people. Otherwise super loving and always there for me. And yet he can't live without confirmation from others it seems" (personal communication, June 2020).

Finally, some threads addressed cyberbullying experiences. Cyberbullying is also a stressful situation caused by how other people use digital media. The threads described cyberbullying by school friends or in online forums (e.g., personal communication, November 2012, February 2010), demonstrating that the cyberbullying experience is accompanied by severe psychological and physical consequences, such as sadness, social withdrawal, and suicidal thoughts.

Frequently, the initial threads described stress situations that could not be attributed to digital stressors alone but resulted from an interplay between digital and analog stressors. In the professional context, such situations were related to personal problems with colleagues or bosses, high workloads, or a general dissatisfaction with the work situation. In the private context, digital stress situations were often connected to underlying relationship problems that revealed a general lack of trust in one's partner. Stress situations due to disappointed communication expectations were usually accompanied by a perceived lack of appreciation. Therefore, digital stressors often accounted for only one puzzle piece in the complex overall stress situation.

In some cases, thread creators described previous attempts to handle stressful situations. As all of their coping attempts had been unsuccessful (e.g., "I spoke to the boss, but he doesn't care about it"; personal communication, December 2019), they chose to seek help on the forum. They explicitly asked for other people's support with their problems: "I urgently need your advice" (personal communication, November 2012), or "I don't know what to do anymore. . . . Help me or us . . ." (personal communication, August 2019). In a way, the very act of writing about the stress experience can already be understood as a form of coping because it constitutes a first step in dealing with the problem by identifying it and reflecting on it. The thread creators themselves articulated this positive effect: "Thank you, it's good to get that off my chest" (personal communication, May 2020), or "at least it did me good to write it all down" (personal communication, May 2019).

Provided Social Support for Digital Stress Experiences (RQ2)

On the forums, thread creators received support for both professional and private digital stress experiences. Overall, informational support clearly outweighed emotional support.

Informational Support

The numerous replies that provided informational support for specific digital stress experiences comprised not only emotion-focused and problem-focused coping recommendations but also recommendations that were categorized as regenerative coping strategies.

Emotion-focused coping suggestions contained advice on how to change or regulate one's emotional response to a stressful situation. Such suggestions were more common for digital stress experiences in the private context than in the professional context. Thread creators were often advised to accept the communication behaviors of others and to take them less personally when others did not reply quickly to messages (e.g., "don't take everything so seriously and especially personally"; personal communication, July 2019; "writing is not everyone's cup of tea"; personal communication, June 2020). In the professional context, emotion-focused coping recommendations included, for example, advice to develop a more relaxed attitude toward the job (e.g., "Try not to put pressure on yourself"; personal communication, October 2019), to accept the situation (e.g., monotonous screen work; personal communication, February 2020), or to "stop feeling guilty" (personal communication, June 2020) when ignoring phone calls or e-mails outside working hours.

Overall, our analysis showed that problem-focused coping recommendations (i.e., advice on how to solve stress-causing situations) outweighed emotion-focused coping recommendations in the two forums we studied. The range of problem-focused coping strategies was wide; however, in both work and private contexts, and for nearly all stress situations, such strategies were clearly dominated by the advice to pursue personal, face-to-face conversations (with superiors, colleagues, friends, or partners). The other suggested coping strategies differed strongly with regard to the respective stressors. The many thread creators who described permanent availability in the professional context (invasion) were advised to check whether such behavior is compatible with labor laws and the individual employment contract, to seek help from workers' councils or lawyers (e.g., "Are you the only one the boss does this to? . . . Maybe you have a workers'

council, then I would get support there"; personal communication, February 2016), or to look for a new job. When thread creators described problems with handling certain software programs (complexity), recommendations on getting help from other colleagues and acquiring skills via online tutorials or other courses were dominant. For stress experiences caused by constantly observing others' communication behaviors, thread creators were advised to concentrate more on real life (e.g., "look for friends in real life [club, theater group, choir, etc.]"; personal communication, October 2019). In the cyberbullying context, problem-focused coping recommendations proposed seeking help from experts (e.g., police, youth welfare office, doctors) and withdrawing from social media (e.g., "log off there as soon as possible"; personal communication, January 2011).

In addition, further coping recommendations emerged that were summarized as regenerative coping. Such recommendations referred almost exclusively to work-related digital stress, which was often accompanied by high workloads. The recommendations included tips to engage in different types of physical activity or relaxation, such as, advice to do sports, go for walks, or try out meditation. In a similar vein, another recommendation was to treat oneself to something nice to recharge one's batteries (e.g., reading a book, going shopping, going to the movies, or going away for a weekend). One person pointed out that time off was mandatory if the constant stress at work was not to have serious consequences:

> How about you and your husband also go away for a weekend? . . . Maybe to the mountains or to the Baltic Sea, depending on where you live. Stress is the factor that destroys us the most in today's society. . . . You've recognized it yourself very well, otherwise you'll slip into a burnout. (personal communication, March 2020)

Emotional Support

Despite the prevalence of informational support, the replies also contained comments that provided emotional support. Thread creators received emotional support when forum participants wrote compassionate responses or expressed affirmation. Compassion was shown via comments such as "I understand how you feel" (personal communication, May 2020) or "I'm sorry you're having these problems" (personal communication, February 2020). The replies also contained affirmations, which emphasized the sense that thread creators were right in their assessments of stress situations and that their feelings were justified (e.g., "I absolutely understand that you can get very jealous there"; personal communication, July 2016; "you don't have to put up with this"; personal communication, January 2020). Emotional support was also provided when forum participants reported having experienced similar situations themselves. Such comments showed that other people had identical or similar problems. Awareness of not being alone in a certain problem can provide emotional comfort. For work-related digital stress, a common problem was the invasion of work into private life. In their replies, many people stated that they were also being affected by work outside their official working hours, that superiors in particular took permanent accessibility for granted, and that they found it difficult to draw a line between the two spheres: "I was in this situation almost a year ago. . . . suddenly I was handed a company cell phone with the unofficial expectation of being reachable during vacation and illness" (personal communication, April 2020). In the private context, thread creators were assured that many other people were also distressed by the communication behaviors of friends and family members. This refers, for example, to delayed responses from others (e.g., "I also catch myself getting angry about it"; personal communication, May 2016) or to the sharing of certain

information via social media: "In a similar vein, I once learned about the death of the father of a work colleague via Facebook. Sorry, but . . . . I find such a thing quite inappropriate and irreverent" (personal communication, February 2020).

In summary, thread creators received widespread informational and emotional support from forum participants when disclosing their digital stress experiences. However, it must be noted that some people's replies showed an utter lack of understanding and denied that thread creators were right in their assessments of the situations. This mainly had to do with descriptions of online communication behaviors (e.g., delayed responses) where divergent opinions occurred most often, but also concerned posts describing permanent availability in the professional context: "I don't understand that . . . . I also have a business cell phone. And I even have to be reachable during vacation. So what?" (personal communication, September 2016).

Discussion

In analyzing online forum discussions on digital stress, our study adopted an individual-centered perspective and focused on interpersonal communication in digital stress. Our aim was to determine for which digital stress experiences individuals seek online help and what kind of social support is provided in anonymous online forums. As studies on digital stress rely mostly on standardized survey designs, analyzing interpersonal online communication is a rather unusual approach. Our findings revealed, however, that such an analysis is of high value because it provides additional insights into the phenomenon of digital stress.

Regarding the reported digital stress experiences, our findings showed that stress experiences differed depending on the context—that is, whether digital stress concerned individuals' professional or private lives. In the professional context (expected) permanent availability, which was connected to the perceived invasion of work into the private sphere, clearly dominated the forum discussions. In the private context, digital stress experiences were mostly related to interpersonal conflicts. Stress occurred due to unmet communication expectations (e.g., delayed responses), other people's social media use, and cyberbullying.

Despite involving different stressors, professional and personal digital stress experiences have one striking commonality: Both focus on stress experiences caused by other people's ICT use (e.g., that of friends, partners, colleagues, or superiors) rather than one's own ICT use. This finding is consistent with Weinstein and Selman's (2016) study because the identified stressors in adolescents' personal accounts (e.g., "mean and harassing personal attacks," "feeling smothered"; p. 398) also referred to other people's ICT use and interpersonal conflicts.

Furthermore, our analysis showed that the reported digital stress experiences were usually related to additional analog stressors, such as high workloads, job dissatisfaction, or relationship problems. Consequently, the digital stressor was often only one of many components in the overall stress situation, which made it difficult to distinguish whether the stress was primarily caused by digital or analog demands (see also Nitsch & Kinnebrock, 2021). For example, several reported that interpersonal conflicts initially had nothing to do with digital stress and concerned basic relationship problems (e.g., a lack of trust). However, these problems were transferred to ICT use and emerged in digital communication as well.

As with other problems, online forums served as sources of social support for digitally stressed individuals. The forums provided emotional support when participants expressed compassion or acknowledged having encountered similar stress situations. However, informational support was more common than emotional support, which can be explained by the fact that thread creators explicitly asked for advice on how to cope with their ICT-related stress experiences.

In our study, we divided informational support into emotion-focused and problem-focused coping recommendations. The range of problem-focused coping strategies was broad but was dominated by the advice to pursue face-to-face conversations. Since the majority of the reported digital stress experiences were related to interpersonal conflicts, this shows that "taking conflicts offline" by having a joint in-person discussion is regarded as best for resolving the problem. The numerous other problem-focused recommendations illustrate the fact that different stressful situations require different coping strategies. Emotion-focused coping recommendations were particularly frequent when stress was caused by unmet communication expectations—that is, when thread creators had no direct influence on changing the stress-causing situation (see the optimal matching model; Cutrona & Suhr, 1992). Thread creators were advised to change their attitudes, take it less personally when others did not reply quickly to their messages, and accept others' communication behaviors. For work-related digital stress accompanied by high workloads, forum participants also suggested regenerative coping strategies (e.g., meditating).

Even though most replies provided social support, our analysis revealed that forum participants occasionally expressed a lack of understanding and denied that thread creators assessed the situations correctly. This illustrates that the same situation can be perceived as either stressful or not by different people and points to what Lazarus and Folkman (1984b) called primary appraisal. What is normal and natural for some (e.g., delayed replies to messages or posts about the death of loved ones on social media channels) is perceived by others as rude, inappropriate, or disrespectful. Therefore, the online forum discussions also revealed that there is as yet no societal consensus on digital communication norms. This lack of consensus contributes to the emergence of ICT-related stress situations and conflicts.

As with all qualitative studies, the generalizability of our results is limited, especially since we analyzed discussions in only two online forums. A downside of anonymity in online forums is that we do not know much about the people behind the forum posts. Therefore, it is not possible to make statements concerning age or gender differences. Further, our findings have to be interpreted against the backdrop of the analyzed forums. Opposed to technical forums, med1.de and hilferuf.de cover a broad range of issues. They provide social support, not technical support. This might explain the prevalence of interpersonal conflicts related to ICT and why some stressors that are known from literature (i.e., complexity, uncertainty, or unreliability; Ragu-Nathan et al., 2008; Tarafdar et al., 2010, 2011) play a minor role in the analyzed online forums. For purely technical problems, med1.de and hilferuf.de are not appropriate places to look for help; it can be assumed that people turn to technical forums or IT experts instead.

The prevalence of reported stress experiences connected to other people's ICT use might be fueled by the fact that it is easier to write about others stressing oneself than to reflect and admit that their behavior might be responsible for the current stress. Nevertheless, these stress experiences are an important finding. They clearly demonstrate that digital stress is more than just technical and psychological

stress; digital stress also has a social component and manifests itself in interpersonal relationships. While digital stress experiences in the professional context were often connected to people's concerns about what others expected of them (i.e., permanent availability), in the private context, they mostly had to do with people's expectations of others (i.e., concrete expectations concerning others' communication behavior). With their focus on other people's ICT use, the analyzed forum discussions addressed a special kind of digital stress. This adds a new perspective and shows that digital stress must be viewed in a more complex way. An important theoretical implication of our study is that the traditional psychological concept of (digital) stress needs to be extended by a social component and that digital stress must be understood as a social phenomenon. Our results thus call for a broader conceptualization of digital stress in future research.

By analyzing what kind of social support was provided by forum participants, our study also sheds light on what solutions for ICT-related stress situations may look like. The recommendations on how to cope with digital stress are highly contextualized and focus primarily on people's everyday lives. Whether these recommended coping strategies prove to be successful is an empirical question that needs to be answered by other studies. However, since interventions will only work if they start with people's everyday knowledge, it is inevitable, at least, to know what is commonly understood as potentially successful coping strategies.

With their focus on digital stress experiences connected to other people's ICT use, discussions in online forums provide an opportunity to extend our knowledge of digital stress experiences. If we want to gain a comprehensive understanding of digital stress—that is, why digital stress occurs, what role human interactions play, what individuals perceive as digital stress, and how they can successfully cope with it—it is essential to expand our conception of digital stress and address its social dimension. This implies the use of additional research methods that can capture social communication and the associated processes of negotiating meaning among humans. This includes, for example, qualitative interview studies (e.g., Nitsch & Kinnebrock, 2021), media diaries (Waldenburger & Wimmer, 2022), and content analyses of both media coverage and interpersonal communication on social media.

References

Ayyagari, R. (2012). Impact of information overload and task-technology fit on technostress. *SAIS 2012 Proceedings, 4,* 18–22. Retrieved from http://aisel.aisnet.org/sais2012/4

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly, 35*(4), 831–858. doi:10.2307/41409963

Beaudry, A., & Pinsonneault, A. (2005). Understanding user responses to information technology: A coping model of user adaptation. *MIS Quarterly, 29*(3), 493–524. doi:10.2307/25148693

Bergdahl, J., & Bergdahl, M. (2002). Perceived stress in adults: Prevalence and association of depression, anxiety and medication in a Swedish population. *Stress and Health: Journal of the International Society for the Investigation of Stress, 18*(5), 235–241. doi:10.1002/smi.946

Brod, C. (1982). Managing technostress: Optimizing the use of computer technology. *The Personnel Journal, 61*(10), 753–757.

Brod, C. (1984). *Technostress: The human cost of the computer revolution*. Reading, MA: Addison-Wesley.

Cutrona, C. E. (1990). Stress and social support: In search of optimal matching. *Journal of Social and Clinical Psychology, 9*(1), 3–14. doi:10.1521/jscp.1990.9.1.3.

Cutrona, C., & Russell, D. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 319–366). New York, NY: John Wiley & Sons.

Cutrona, C. E., & Suhr, J. A. (1992). Controllability of stressful events and satisfaction with spouse support behaviors. *Communication Research, 19*(2), 154–174. doi:10.1177/009365092019002002

Demjén, Z. (2016). Laughing at cancer: Humour, empowerment, solidarity and coping online. *Journal of Pragmatics, 101*, 18–30. doi:10.1016/j.pragma.2016.05.010

Desens, L., Kreps, G., & Su, Y. (2019). Online social support: Analysis of an online discussion forum for significant others of deployed service members. *Journal of Veterans Studies, 4*(2), 94–111. doi:10.21061/jvs.v4i2.69

Eriksson, H., & Salzmann-Erikson, M. (2013). Supporting a caring fatherhood in cyberspace—An analysis of communication about caring within an online forum for fathers. *Scandinavian Journal of Caring Sciences, 27*(1), 63–69. doi:10.1111/j.1471-6712.2012.01001.x

Freytag, A., Knop-Huelss, K., Meier, A., Reinecke, L., Hefner, D., Klimmt, C., & Vorderer, P. (2021). Permanently online—Always stressed out? The effects of permanent connectedness on stress experiences. *Human Communication Research, 47*(2), 132–165. doi:10.1093/hcr/hqaa014

Hall, J. A., Steele, R. G., Christofferson, J. L., & Mihailova, T. (2021). Development and initial evaluation of a multidimensional digital stress scale. *Psychological Assessment, 33*(3), 230–242. doi:10.1037/pas0000979

Hanasono, L. K., & Yang, F. (2016). Computer-mediated coping: Exploring the quality of supportive communication in an online discussion forum for individuals who are coping with racial discrimination. *Communication Quarterly, 64*(4), 369–389. doi:10.1080/01463373.2015.1103292

Haverfield, M. C., Leustek, J., & Timko, C. (2017). Social support strategies in online forums among adult offspring of parents with harmful alcohol use. *Alcoholism Treatment Quarterly, 36*(1), 86–100. doi:10.1080/07347324.2017.1387035

Hefner, D., & Vorderer, P. (2016). Digital stress: Permanent connectedness and multitasking. In L. Reinecke & M. Oliver (Eds.), *The Routledge handbook of media use and well-being: International perspectives on theory and research on positive media effects* (pp. 237–249). New York, NY: Routledge.

Hsieh, H.-F., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277–1288. doi:10.1177/1049732305276687

Kinnebrock, S., & Nitsch, C. (2020). „Ganz schön sozial-medial erschöpft..." Eine qualitative Inhaltsanalyse über digitalen Stress und immanente Genderbezüge [Quite exhausted by social media... " A qualitative content analysis on digital stress and immanent gender references]. *Medien und Kommunikationswissenschaft, 68*(3), 288–303. doi:10.5771/1615-634X-2020-3-288

Lazarus, R. S., & Folkman, S. (1984a). *Stress, appraisal, and coping*. New York, NY: Springer.

Lazarus, R. S., & Folkman, S. (1984b). Coping and adaptation. In W. D. Gentry (Ed.), *Handbook of behavioral medicine* (pp. 282–325). New York, NY: The Guilford Press.

Lazarus, R. S., & Folkman, S. (1986). Cognitive theories of stress and the issue of circularity. In M. H. Appley & R. Trumbull (Eds.), *Dynamics of stress. Physiological, psychological, and social perspectives* (pp. 63–80). New York, NY: Plenum.

Lee, A. R., Son, S.-M., & Kim, K. K. (2016). Information and communication technology overload and social networking service fatigue: A stress perspective. *Computers in Human Behavior, 55*, 51–61. doi:10.1016/j.chb.2015.08.011

Lee, Y.-K., Chang, C.-T., Lin, Y., & Cheng, Z.-H. (2014). The dark side of smartphone usage: Psychological traits, compulsive behavior and technostress. *Computers in Human Behavior, 31*, 373–383. doi:10.1016/j.chb.2013.10.047

Li, Q., Dai, W., Zhong, Y., Wang, L., Dai, B., & Liu, X. (2019). The mediating role of coping styles on impulsivity, behavioral inhibition/approach system, and internet addiction in adolescents from a gender perspective. *Frontiers in Psychology, 10*, 2402. doi:10.3389/fpsyg.2019.02402

McLean, L., & Griffiths, M. D. (2019). Female gamers' experience of online harassment and social support in online gaming: A qualitative study. *International Journal of Mental Health & Addiction, 17*, 970–994. doi:10.1007/s11469-018-9962-0

Menke, M., Wagner, A. J. M., & Kinnebrock, S. (2020). Communicative care in online forums: How burdened informal caregivers seek mediated social support. *International Journal of Communication, 14*, 1662–1682. Retrieved from https://ijoc.org/index.php/ijoc/article/view/12479

Miller, J. K., & Gergen, K. J. (1998). Life on the line: The therapeutic potentials of computer-mediated conversation. *Journal of Marital & Family Therapy, 24*(2), 189–202. doi:10.1111/j.1752-0606.1998.tb01075.x

Nawratil, U., & Schönhagen, P. (2009). Die qualitative Inhaltsanalyse: Rekonstruktion der Kommunikationswirklichkeit [The qualitative content analysis: Reconstruction of the reality of communication]. In H. Wagner (Ed.), *Qualitative Methoden in der Kommunikationswissenschaft. Ein Lehr- und Studienbuch* [Qualitative methods in communication studies. A textbook and study guide] (pp. 333–346). Baden-Baden, Germany: Nomos.

Nitsch, C., & Kinnebrock, S. (2021). Well-known phenomenon, new setting: Digital stress in times of the COVID-19 pandemic. *SCM—Studies in Communication and Media, 10*(4), 533–556. doi:10.5771/2192-4007-2021-4-533

Ragu-Nathan, T., Tarafdar, M., Ragu-Nathan, B., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research, 19*(4), 417–433. doi:10.1287/isre.1070.0165

Reifegerste, D., Wasgien, K., & Hagen, L. M. (2017). Online social support for obese adults: Exploring the role of forum activity. *International Journal of Medical Informatics, 101*, 1–8. doi:10.1016/j.ijmedinf.2017.02.003

Reinecke, L., Aufenanger, S., Beutel, M. E., Dreier, M., Quiring, O., Stark, B., . . . Müller , K. W. (2017). Digital stress over the life span: The effects of communication load and Internet multitasking on perceived stress and psychological health impairments in a German probability sample. *Media Psychology, 20*(1), 90–115, doi:10.1080/15213269.2015.1121832

Reinecke, L., Klimmt, C., Meier, A., Reich, S., Hefner, D., Knop-Huelss, K., . . . Vorderer, P. (2018). Permanently online and permanently connected: Development and validation of the Online Vigilance Scale. *PLoS ONE, 13*(10), e0205384. doi:10.1371/journal.pone.0205384

Rodriquez, J. (2013). Narrating dementia: Self and community in an online forum. *Qualitative Health Research, 23*(9), 1215–1227. doi:10.1177/1049732313501725

Salo, M., Makkonen, M., & Hekkala, R. (2020). The interplay of IT users' coping strategies: Uncovering momentary emotional load, routes, and sequences. *MIS Quarterly, 44*(3), 1143–1175. doi:10.25300/MISQ/2020/15610

Schmidt, M., Frank, L., & Gimpel, H. (2021). How adolescents cope with technostress: A mixed-methods approach. *International Journal of Electronic Commerce, 25*(2), 154–180. doi:10.1080/10864415.2021.1887696

Skinner, E., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*(2), 216–269. doi:10.1037/0033-2909.129.2.216

Steele, R. G., Hall, J. A., & Christofferson, J. L. (2020). Conceptualizing digital stress in adolescents and young adults: Toward the development of an empirically based model. *Clinical Child and Family Psychology Review, 23*(1), 15–26. doi:10.1007/s10567-019-00300-5

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & Behavior, 7*(3), 321–326. doi:10.1089/1094931041291295

Tanis, M. (2007). Online social support groups. In A. N. Joinson, K. Y. A. McKenna, T. Postmes, & U. Reips (Eds.), *The Oxford handbook of internet psychology* (pp. 139–153). New York, NY: Oxford University Press.

Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of technostress on end-user satisfaction and performance. *Journal of Management Information Systems, 27*(3), 303–334. doi:10.2753/MIS0742-1222270311

Tarafdar, M., Tu, Q., Ragu-Nathan, T. S., & Ragu-Nathan, B. S. (2011). Crossing to the dark side: Examining creators, outcomes, and inhibitors of technostress. *Communications of the ACM, 54*(9), 113–120. doi:10.1145/1995376.1995403

Vorderer, P., Hefner, D., Reinecke, L., & Klimmt, C. (Eds.). (2018). *Permanently online, permanently connected: Living and communicating in a POPC world*. New York, NY: Routledge.

Waldenburger, L., & Wimmer, J. (2022). Qualitative content analysis of media diaries with a focus on further qualitative online interviews. In *SAGE Research Methods: Doing Research Online*. doi:10.4135/9781529601947

Walther, J. B., & Boyd, S. (2002). Attraction to computer-mediated social support. In C. A. Lin & D. J. Atkin (Eds.), *Communication technology and society: Audience adoption and uses* (pp. 153–188). Cresskill, NJ: Hampton Press.

Wang, X., Zhao, K., & Street, N. (2017). Analyzing and predicting user participations in online health communities: A social support perspective. *Journal of Medical Internet Research, 19*(4), e130. doi:10.2196/jmir.6834

Weinstein, E. C., & Selman, R. L. (2016). Digital stress: Adolescents' personal accounts. *New Media & Society, 18*(3), 391–409. doi:10.1177/1461444814543989

Weinstein, E. C., Selman, R. L., Thomas, S., Kim, J.-E., White, A. E., & Dinakar, K. (2016). How to cope with digital stress: The recommendations adolescents offer their peers online. *Journal of Adolescent Research, 31*(4), 415–441. doi:10.1177/0743558415587326

Wood, A. F., & Smith, M. J. (2001). *Online communication: Linking technology, identity, and culture*. Mahwah, NJ: Lawrence Erlbaum.

Wright, K. B., & Bell, S. B. (2003). Health-related support groups on the internet: Linking empirical findings to social support and computer-mediated communication theory. *Journal of Health Psychology, 8*(1), 39–54. doi:10.1177/1359105303008001429