Any Time and Place? Digital Emotional Support for Digital Natives

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Digital natives (i.e., those who have grown up in the digital age) are likely to receive emotional support through digital means, such as texting and video calling. However, virtually all studies assessing the benefits of emotional support have focused on in-person support; the relative efficacy of digital support remains unclear. This study assessed a sample of young adults' negative emotions, digital and in-person support for those emotions, and success in regulating them 3 times per day for 14 days ($N = 164$; 6,530 collective measurement occasions). Participants' social surroundings at the time of each negative emotion and trait levels of social avoidance were also considered. Digital support was expected to be received more often and perceived as more effective for regulating negative emotions when participants were alone and higher in social avoidance. However, with the exception of those higher in social avoidance receiving less digital (and in-person) support, digital support was received and perceived as effective regardless of these factors, and its perceived effectiveness was on par with that of in-person support. For digital natives, digital support may be just as effective as the "real thing" and its benefits may not be restricted to isolated or socially avoidant users. Findings are discussed in relation to the emotional consequences and social constraints of the COVID-19 pandemic. If transcending the time and space limitations of in-person support with digital support is the new norm, the good news is that it seems to be working.

Public Significance Statement
Young adults in this study found support received digitally (e.g., through texting, video calling) to be just as effective as support received in person for managing intense negative emotions. The general public largely regards digital interactions as insufficient and researchers have mostly focused on the harms of digital devices for today's youth. To the contrary, these results suggest that youth routinely engage in supportive digital interactions and perceive them positively.

When a negative emotion is experienced, emotional support from others can provide an empathic connection, a sense of self-worth, and a conduit for emotion regulation (Lougheed, Hollenstein, Lichtwarck-Aschoff, & Granic, 2015; Marroquín, 2011; Thoits, 2011). Emotional support is traditionally received in person, but digital devices have emerged as a potentially dominant way to navigate emotions with the help of others, particularly among young adults. Up to 95% of young adults own a digital device and 45% are "online on a near constant basis" (Pew Research Center, 2018). Digital devices have the capacity to instantly connect individuals to emotional support regardless of when and where they are feeling upset (Ellis, 2019; Leick, 2018). The emotional support literature—dominated by studies of in-person support (Marroquín,

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2011)—is lagging behind the recent proliferation of digital activity. The few studies of digital emotional support have focused on its insufficiencies relative to in-person support in controlled laboratory settings (e.g., Holtzman, DeClerck, Turcotte, Lisi, & Woodworth, 2017). Much less is known about the day-to-day, real-life benefits of digital support for young adults, how these benefits measure up to those of in-person support, and when and for whom they apply.

Emotional Support

The present study focused on informal emotional support in everyday, nonprofessional contexts rather than formal support received from a practitioner or as part of an intervention. A typical (successful) support scenario can be characterized as a process in which (a) a negative emotion arises, (b) support is received for that emotion, and (c) the emotion is downregulated (see Lougheed et al., 2015; Marroquín, 2011; Thoits, 2011). Specifically, the amount of support received typically depends on the intensity of the initial negative emotion. More intense negative emotions are more difficult to regulate (Sheppes & Gross, 2013) and thus require more support from others (Luminet, Bouts, Delie, Manstead, & Rimé, 2000; Nezlek & Kuppens, 2008). The more that support is perceived as effective, the more it is thought to result in successful regulation of the initial negative emotion (Oh, Ozkaya, & LaRose, 2014). The present study adopted this 'emotion intensity → emotional support → emotion regulation success' framework to characterize the emotional support process across a variety of naturally unfolding emotional events.

The Potential Benefits of Digital Devices for Emotional Support

While researchers continue to debate the harms of digital devices (Booker, Kelly, & Sacker, 2018; Heffer, Good, Daly, MacDonell, & Willoughby, 2019; Jelenchick, Eickhoff, & Moreno, 2013; Kross et al., 2013; Twenge & Campbell, 2018; Twenge, Joiner, Rogers, & Martin, 2018), much less attention has been paid to the benefits of such devices (Ellis, 2019). An overlooked and potentially advantageous function of digital devices may be their ability to connect users to others, anytime and anywhere (Ellis, 2019; Leick, 2018). Digital devices were initially designed for interpersonal communication and are thus intimately tied to how individuals relate to others (Kardos, Unoka, Pléh, & Soltész, 2018; Wei & Lo, 2006). Indeed, young adults in one study said they would miss interpersonal contact and social support the most if they lost their cell phone for five days, and those who were more likely to regulate their negative emotions digitally were also more likely to miss their device (Hoffner & Lee, 2015). Hence, the near-constant social connection afforded by digital devices likely plays an important role in managing the impact of daily negative emotions.

Some studies have experimentally compared the benefits of digital versus in-person interactions and emotional support. Sherman, Michikyan, and Greenfield (2013) found that self-reported bonding was highest when young women (recruited in pairs of close friends) engaged in a face-to-face interaction, followed by video, audio, and instant-messaging interactions. In a similar study, young adults who engaged in an in-person conversation reported higher levels of positive mood and basic needs satisfaction in comparison to those who instant messaged (Sacco & Ismail, 2014). In the most direct existing assessment of digital emotional support, Holtzman et al. (2017) found that young adults who received digital emotional support via text messaging after a stressor induced in the lab were less likely to feel better than those who received in-person support. These findings suggest that emotional support received through digital means might be less effective than support received in person, but they are limited to controlled laboratory settings. Experimentally induced emotional states and text-based supports may not reflect the range of negative emotions and digital supports experienced on a day-to-day basis. Naturalistic, daily assessments are more likely to tap into the full breadth and potential of digital emotional support and may elucidate when and by whom digital devices are used to navigate common emotional experiences. Focusing on real-life benefits may thus explain, at least in part, why purportedly harmful digital devices are used so frequently by young adults.

Contextual and Individual Difference Moderators: Social Surroundings and Social Avoidance

The occurrence and benefits of digital emotional support, and the extent to which it stacks up to in-person support, may depend on contextual factors and individual differences in traits that render digital support more or less appropriate (see Heffer et al., 2019; Orben, 2020). The present study considered two plausible moderators of digital support receipt and efficacy: social surroundings (i.e., whether the individual was alone or with others at the time of their negative emotion) and trait-level tendencies of social avoidance.

Social Surroundings

Negative emotions are characterized by a lack of control and/or comfort (Berkowitz, 1989; Oatley & Duncan, 1992; Raghunathan, Pham, & Corfman, 2006). Digital emotional support may satisfy immediate control more than it satisfies comfort. Relative to in-person support, digital support is available on demand (Ellis, 2019; Leick, 2018). This immediacy may be helpful for alleviating urgent threat and high arousal, especially when the recipient is alone and in-person support is not immediately available. However,

digital support may be less effective for comforting feelings of loss. Unlike in-person support, digital support lacks physical touch and it often lacks the dynamic and interactive facial and bodily cues that can facilitate comfort (White & Dorman, 2001). Thus, when an individual is with others and in-person support is available, digital support may be less likely and possibly perceived as a less effective route.

Trait Social Avoidance

Individuals high in trait social avoidance tend to feel uncomfortable in the presence of others and thus avoid social interactions (Elliot, Gable, & Mapes, 2006). This does not always mean that such individuals prefer to be alone and do not need external emotional support; they may just lack the confidence to approach others for in-person support (Barry, Nelson, & Christofferson, 2013; Coplan & Rubin, 2010), particularly while experiencing negative emotions. Digital devices may provide individuals high in trait social avoidance with a safe haven from which they can receive emotional support. Higher trait social avoidance may thus be associated with greater receipt and perceived efficacy of digital support.

The Present Study

The present study used an intensive experience sampling approach to assess young adults' digital and in-person emotional support scenarios as they naturally unfolded on a daily basis (14 days, three prompts per day, up to 42 instances of emotional support per participant). Emotional support was modeled at each prompt as a process in which (a) a negative emotion was experienced, (b) support was received for that emotion, and (c) the emotion was regulated. Plausible moderators were then considered. Specifically, the receipt and efficacy of digital and in-person support were assessed when participants were alone versus with others on a prompt-to-prompt basis. This contextual moderator was mirrored at the trait level by assessing the receipt and efficacy of digital and in-person support for participants higher versus lower in trait social avoidance.

We expected the following: When participants were alone (as opposed to with others), they would receive more digital support and perceive it as more effective (Hypothesis 1). Participants higher (as opposed to lower) in trait social avoidance would also receive more digital support and perceive it as more effective (Hypothesis 2). In-person support was included in analyses to ensure that core findings were unique to digital support and to compare digital and in-person support processes. However, given that literature comparing digital and in-person support is limited (and nonexistent in naturalistic, everyday contexts), no specific relative hypotheses were made.

Method

Participants

Participants ($N = 185$ with up to 7,770 prompts; 86% female; $M_{age} = 19.10$ years, $SD = 2.95$; 57% Caucasian, 29% Asian, 4% Black, 1% Latin American, and 9% multiethnic/other) were recruited from a participant pool consisting of undergraduate students taking first- and second-year psychology courses at a medium-sized university in Canada. They participated in exchange for course credit. Data collection spanned September 2018–November 2018. The gender and ethnic compositions of the sample were representative of the pool from which the sample was drawn. For details on the reduced sample used in analyses, see the Data Reduction section.

Procedure

Initial visit. Participants registered online and were e-mailed a consent form. After providing consent, they attended an in-person session at the university library in which they completed a questionnaire on their demographics and social and emotional functioning, including the trait social avoidance scale under investigation as a moderator in the present study. They then downloaded the MetricWire experience sampling smartphone app (MetricWire, Kitchener, Canada) on their personal digital device with the help of a research assistant who also instructed them on the experience sampling portion of the study. The research assistant prepared participants for reporting the intensity (rather than presence vs. absence) of daily negative emotions by providing examples of negative emotions along a continuum from 1 (*not intense at all, I barely noticed it*) to 10 (*the most intense*).

Experience sampling. Starting the day after their initial visit, participants were prompted by the MetricWire app at 11:00 a.m., 4:00 p.m., and 8:30 p.m. every day for 14 days (42 prompts). This design was chosen to align with an earlier study—conducted by coauthors of the present study—with an early adolescent sample that was in school at the time. Three prompts also ensured sufficient time to experience a notable negative emotion between prompts. Each prompt took approximately 2 to 3 min to complete and participants were given a 90-min completion window to accommodate their varying schedules. Research assistants monitored the fidelity of prompt completion each evening and sent reminder e-mails to those who missed any prompts. At the end of the 14-day period, participants were e-mailed a debriefing letter and allotted their course credit.

Each prompt included a brief set of questions probing the following elements (in order): (a) current mood, (b) type of negative emotion experienced since last prompt (anger, sadness, or anxiety; forced choice), (c) intensity of the emotion, (d) who was around when the emotion was expe-

rienced, (e) digital and in-person support sought and received[1] for the emotion, (f) control over the situation and emotion, (g) response to the emotion (i.e., regulation strategy), and (h) perceived success in managing the emotion. The present analysis focused on elements c, d, e, and h.

Measures

Trait social avoidance. Participants completed the eight-item Behavioral Social Avoidance subscale of the Cognitive–Behavioral Avoidance Scale (Ottenbreit & Dobson, 2004). They rated each item (e.g., "I tend to make up excuses to get out of social activities", "I tend to remain to myself during social gatherings or activities") on a 5-point scale from 1 (*not at all true for me*) to 5 (*extremely true for me*). The scale was reliable ($\alpha = .87$).

Emotion intensity. For the strongest negative emotion experienced since their last prompt, participants were asked, "When you first noticed your emotion, how intense was it?", and responded on a 10-point scale from 1 (*not intense at all, I barely noticed it*) to 10 (*the most intense*).

Social surroundings. Participants were then asked, "Who was around you when you were experiencing this emotion?", and chose from the following: parents/guardians, siblings, teacher, students at school, staff at school, friends, boyfriend/girlfriend, boss, coworkers, strangers, other, or I was alone. To retain as many prompts as possible, responses were binary coded as 0 (*alone*) or 1 (*with others*; i.e., all responses other than "I was alone"). However, since close others may represent more viable sources of support, responses were also binary coded as 0 (*alone*) or 1 (*close others*; i.e., parents/guardians, siblings, friends, and boyfriend/girlfriend). This restricted variable was used in follow-up analyses to account for the potential effect of closeness.

Digital and in-person emotional support. Participants were then asked, "How much emotional help or support did you get from people who were not physically with you (e.g., through texting, calling)?", and, separately, "How much emotional help or support did you get from people who were physically with you?". They indicated both on a 10-point scale from 1 (*no support at all*) to 10 (*a lot of support*). Because there was a 4.5- to 6.5-hr span between prompts, it was possible to receive both digital and in-person support for the same negative emotion. Even if participants were alone at the onset of their negative emotion, they could still receive in-person support for that emotion in the subsequent time leading up to their next prompt.

Emotion regulation success. Participants were finally asked, "Overall, how successful were you in managing your emotion?". They responded on a 10-point scale from 1 (*not at all*) to 10 (*very*).[2]

Data Reduction

Four participants (aged 29, 29, 36, and 48 years) were excluded because they fell outside the young adult age range of interest; the rest of the sample was 17 to 22 years old. To ensure data integrity, participants were excluded if they responded to less than 50% of questions for more than 50% of prompts ($n = 17$).[3] Prompts for which participants reported the lowest possible intensity score for their negative emotion (i.e., 1 [*not intense at all, I barely noticed it*]) were also excluded because they implied no need for regulation and thus no need for support ($n = 359$). Missing data were not estimated or imputed because questions were specific to each prompt/situation. The final sample size for analyses was 164 (88% female; $N = 6,530$ prompts). This sample size provided ~75% power to detect at least a medium-sized effect in a multilevel analysis framework with the obtained estimated intraclass correlation (ICC; see Results section; Kleiman, n.d.).

Analytic Approach

Given the nested structure of the data (i.e., up to 42 prompts belonging to the same participant), multilevel modeling in M*plus* 8 (Muthén & Muthén, 1998–2017) was used to account for nonindependence (Kenny, Kashy, & Bolger, 1998; Raudenbush & Bryk, 2002). Within-level, repeated measures were emotion intensity, digital and in-person emotional support, emotion regulation success, and social surroundings. Measures at the between level (i.e., fixed within participants but differing between them) were trait social avoidance and gender (0 = *female*, 1 = *male*). Established centering procedures for multilevel models were followed (Raudenbush & Bryk, 2002). Specifically, emotion intensity, digital support, and in-person support were group-mean centered to account for within-person effects (e.g., "Does receiving more digital/in-person support than usual [for that participant] coincide with greater emotion regulation success?"). Trait social avoidance was grand-mean centered to account for between-person effects (e.g., "Do participants with higher trait social avoidance receive more digital support *than participants with lower trait social avoidance*?"). Social surroundings and gender

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[1] For both digital and in-person support, amounts sought and received were strongly and positively correlated, rs = .88 and .87, respectively, ps < .001. For parsimony, the present analysis focused on support received.

[2] Single-item measures are appropriate for the brief, intensive, and targeted nature of experience sampling designs (see Goetz, Frenzel, Stoeger, & Hall, 2010). In a previous multilevel experience sampling study, a very similar single-item measure of perceived emotion regulation effectiveness was found to reliably index a well-established multi-item trait measure of emotion dysregulation (Daros et al., 2019).

[3] Because the removal of data based on completion rates may also bias results (Jacobson, 2020), follow-up analyses were conducted to assess the stability of findings after including these 17 participants.
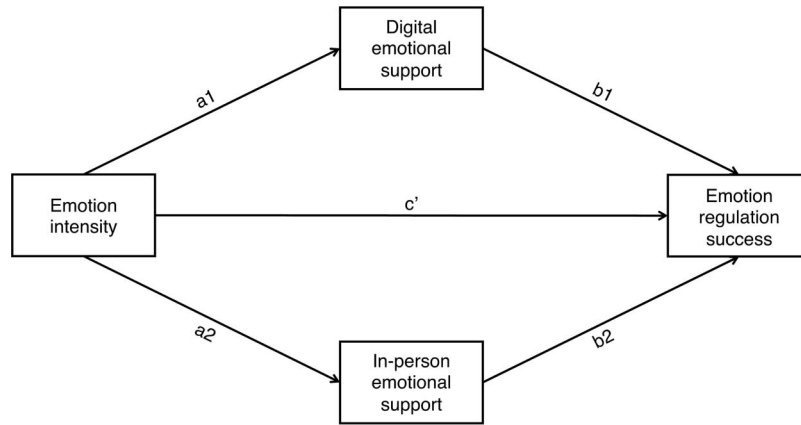
Figure 1. Multilevel multiple indirect effects model testing digital and in-person emotional support processes.

were left uncentered because they already had meaningful zero points.

Data were analyzed in two main steps. At Step 1 (depicted in Figure 1), a multilevel multiple indirect effects model was conducted linking emotion intensity to digital and in-person support (paths a1 and a2, respectively) and, in turn, linking digital and in-person support to emotion regulation success (paths b1 and b2, respectively). The direct effects of emotion intensity (path c') and gender on emotion regulation success were controlled for. The indirect effects calculated from this model (i.e., a1 × b1 and a2 × b2) tested the digital and in-person support processes (i.e., emotion intensity → digital and in-person emotional support → emotion regulation success). The strengths of a1 × b1 and a2 × b2 were contrasted to compare the digital support process to the in-person support process.

At Step 2, social surroundings were added as a predictor of digital support, in-person support, path b1, and path b2. Social surroundings' main effect on digital support and moderating effect on path b1 collectively tested if participants received more digital support and perceived it as more effective when they were alone (Hypothesis 1). Trait social avoidance was also added as a predictor of digital support, in-person support, path b1, and path b2. Its main effect on

digital support and moderating effect on path b1 collectively tested if participants received more digital support and perceived it as more effective if they scored higher in trait social avoidance (Hypothesis 2). Predicting in-person support and path b2 from social surroundings and trait social avoidance helped determine if hypothesized effects were exclusive to digital support. Indices of moderated mediation (Hayes, 2015), when necessary, determined if moderated paths further disrupted the indirect effects representing emotional support processes. All intercepts and slopes were allowed to randomly vary between participants.

Results

Zero-order correlations and descriptive statistics are reported in Table 1. A null model for emotion regulation success revealed an estimated ICC of .40. In other words, 40% of the variance in emotion regulation success could be explained by differences between participants; by extension, up to 60% of the variance could be explained by prompt-to-prompt differences within participants. This aligns with other intensive self-reported longitudinal studies, which typically yield ICCs in the .20–.40 range (Bolger & Laurenceau, 2013).

Table 1
Zero-Order Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7	M (SD)
1. Emotion regulation success	1	.06	.14	.14	−.08	−.15	**.17*****	5.93 (2.55)
2. Digital emotional support	**.12*****	1	**.77*****	**.24*****	**.25*****	**−.17*****	−.08	3.34 (2.89)
3. In-person emotional support	**.20*****	**.42*****	1	**.25*****	.33***	−.22**	−.04	3.52 (2.97)
4. Emotion intensity	**−.27*****	**.19*****	**.17*****	1	.06	.07	.05	4.67 (2.27)
5. Social surroundings	**.09*****	**.08*****	**.37*****	**.03*****	1	−.21**	−.02	.60 (.49)
6. Trait social avoidance	—	—	—	—	—	1	−.14	2.01 (.82)
7. Gender	—	—	—	—	—	—	1	.12 (.32)

Note. Significant effects are bolded. Left side = within correlations. Right side = between correlations (within variables averaged across all 42 prompts). Social surroundings (0 = alone, 1 = with others). Gender (0 = female, 1 = male).
* $p < .05$. ** $p < .01$. *** $p < .001$.

At Step 1, paths a1 and a2 were significant, indicating that prompts with more intense negative emotions had more digital and in-person support (estimates = .17, .11, SEs = .02, .03, ps < .001, 95% CIs [.12, .22], [.05, .16], respectively). Paths b1 and b2 were also significant, indicating that prompts with more digital and in-person support were characterized by greater emotion regulation success (estimates = .07, .12, SEs = .02, .02, ps < .002, 95% CIs [.04, .11], [.09, .16], respectively). Each indirect effect (i.e., a1 × b1 and a2 × b2, respectively) was significant (estimates = .012, .013, SEs = .003, .004, ps = .001, 95% CIs [.005, .019], [.005, .02], respectively), suggesting that prompts with more intense negative emotions were more likely to be characterized by emotion regulation success through more proximal digital and in-person support.[4] The a1 × b1 by a2 × b2 contrast was not significant (estimate = −.001, SE = .005, p = .83, 95% CI [−.011, .009]), suggesting that digital and in-person support mediated the regulation of intense negative emotions to a similar degree. All random intercepts and slopes were significant. Importantly, participants varied in their average levels of digital and in-person support (estimates = 3.66, 3.51, SEs = .42, .41, ps < .001, 95% CIs [2.92, 4.59], [2.79, 4.41], respectively), as well as in the way their digital and in-person support related to their emotion regulation success (estimates = .02, .03, SEs = .005, .006, ps < .004, 95% CIs [.008, .03], [.02, .05], respectively). This warranted Step 2: predicting the variability in these intercepts and slopes from social surroundings and trait social avoidance.

Step 2 results are reported in Table 2. Against Hypothesis 1, being alone was not associated with receiving significantly more (or less) digital support. However, it was associated with receiving significantly less in-person support. Against Hypothesis 2, higher levels of trait social avoidance were associated with significantly less (rather than more) digital support, although this also applied to in-person support. Against Hypotheses 1 and 2, path b1 was not significantly moderated by social surroundings or trait social avoidance. In other words, the extent to which participants perceived greater emotion regulation success when they received more digital support was similar regardless of whether they were alone or with others at the time of their negative emotion and regardless of their trait social avoidance levels. The significant digital and in-person indirect effects from Step 1 remained significant at this step, and their contrast remained nonsignificant. Although not presented here for the sake of brevity, all results were fully replicated by follow-up analyses with the coding of social surroundings restricted to close others (i.e., parents/guardians, siblings, friends, and boyfriend/girlfriend). They were also fully replicated by follow-up analyses including data for the 17 participants with low prompt completion.

Discussion

This intensive experience sampling study aimed to elucidate the real-life, day-to-day benefits of digital emotional support for young adults, how these benefits measure up to those of in-person support, and when and for whom they apply. We expected the receipt and efficacy of digital support to be more pronounced when participants were alone versus with others. Extending this contextual analysis, we hypothesized that individuals higher in trait social avoidance would rely more on digital support and find it more effective for reducing intense negative emotions (in comparison to those lower in trait social avoidance). Interestingly, with the exception of those higher in social avoidance receiving less digital (and in-person) support, we found that digital support was received and perceived as effective regardless of these factors.

Digital Versus In-Person Emotional Support

In the closest existing study of digital versus in-person support, Holtzman et al. (2017) found that digital support via text messaging was *less* successful than in-person, face-to-face support for reducing stress. However, their study had a between-subjects design with small sample sizes in each condition, one kind of stressor (public speaking), and a degree of experimental control that limited ecological validity. The authors acknowledged that in-person support may not outperform digital support in daily life when individuals experience a range of negative emotions for different reasons in different contexts with different options for support. Indeed, across scores of young adults and thousands of real-life situations, the present study found that digital support was just as effective as in-person support for facilitating the regulation of intense negative emotions. This expansive approach may have evened the playing field for digital support, tapping into a broader range of real-life situations in which digital support was the only or best means of support given the circumstances.

Digital Emotional Support in the Presence of Others

The facial expressions and bodily cues of others can signal empathic concern and acceptance (White & Dorman,

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[4] Because there was significant variability between participants in emotion regulation success, we conducted equivalent indirect effect analyses at the between-person level. Paths a1, a2, b2, and c' replicated (estimates = .38, .39, .32, −.18, SEs = .10, .10, .11, .09, ps < .05, 95% CIs [.18, .58], [.19, .58], [.11, .54], [−.36, −.003], respectively). The indirect effect through in-person support was significant (estimate = .13, SE = .05, p < .02, 95% CI [.03, .24]). Path b1 and the broader indirect effect through digital support did not replicate, as participants who received higher levels of digital support across the entire study were no more or less successful in regulating their emotions than those who received lower levels of digital support across the same period (estimates = −.01, −.01, SEs = .11, .04, ps > .90, 95% CIs [-.23, .20], [-.09, .08], respectively).

Table 2
Results of Multilevel Multiple Indirect Effects Model Testing Digital and In-Person Emotional Support Processes

Outcome	Predictor	Estimate	SE	p	95% CI
Emotion regulation success intercept	**Digital emotional support (b1)**	**.08**	**.03**	**.002**	**[.03, .13]**
	In-person emotional support (b2)	**.10**	**.04**	**.006**	**[.03, .17]**
	Emotion intensity (c')	**−.28**	**.03**	**<.001**	**[−.33, −.22]**
	Social surroundings	.09	.08	.213	[−.05, .24]
	Digital Emotional Support × Social Surroundings	−.03	.03	.375	[−.08, .03]
	In-Person Emotional Support × Social Surroundings	.03	.04	.409	[−.04, .10]
	Trait social avoidance	**−.35**	**.16**	**.028**	**[−.67, −.04]**
	Gender	.75	.39	.055	[−.02, 1.52]
Digital emotional support intercept	**Emotion intensity (a1)**	**.17**	**.03**	**<.001**	**[.12, .22]**
	Social surroundings	.05	.06	.474	[−.08, .17]
	Trait social avoidance	**−.39**	**.19**	**.036**	**[−.76, −.03]**
In-person emotional support intercept	**Emotion intensity (a2)**	**.11**	**.03**	**<.001**	**[.06, .16]**
	Social surroundings	**1.65**	**.06**	**<.001**	**[1.52, 1.78]**
	Trait social avoidance	**−.56**	**.18**	**.002**	**[−.91, −.20]**
Digital emotional support–emotion regulation success slope (b1)	Trait social avoidance	.02	.02	.333	[−.02, .07]
In-person emotional support–emotion regulation success slope (b2)	Trait social avoidance	−.01	.03	.642	[−.06, .04]

Note. CI = confidence interval. Significant effects are bolded. Predictors/outcomes a1, a2, b1, b2, and c' refer to paths in Figure 1. Social surroundings (0 = alone, 1 = with others). Gender (0 = female, 1 = male).

2001), and touch triggers a neurochemical process that can lower stress physiology and negative emotionality in the recipient (Ellingsen, Leknes, Løseth, Wessberg, & Olausson, 2016; Lougheed, Koval, & Hollenstein, 2016). Tactile communication is deeply entrenched in day-to-day emotional life (Chang, 2008) and human evolution—even nonhuman primates spend a significant portion of their lives grooming one another beyond what would be expected if such behavior was purely hygienic (Dunbar, 1991). Because digital support lacks physical touch and—with the exception of video calling—bodily cues that can facilitate comfort (White & Dorman, 2001), it was hypothesized to be received less when the physical benefits of in-person support were available. However, the results did not reflect this digital disadvantage. When participants were with others and in-person support was technically available, they still received digital support for intense negative emotions and perceived that support to be effective. Even when analyses were restricted to emotions in the presence of close others, these results held. One possible explanation is that participants were with someone who they did not feel comfortable confiding in and instead reached out digitally to someone they trusted more (either in general or at that particular time). The close other they were with may have actually been the source of their negative emotion, as most social conflicts stem from close relationships (Laursen, 1995). More generally, regardless of who was around, participants may have found it easier to discuss difficult content surrounding negative emotions through digital means—much like children and parents choose to initiate uncomfortable discussions through digital devices (Barrie, Bartkowski, &

Haverda, 2019). These benefits may have overridden any drawbacks associated with the less warm and personal aspects of digital interactions.

Digital Emotional Support When Alone

One of the potential advantages of digital (relative to in-person) support is its on-demand availability (Ellis, 2019; Leick, 2018). Before the invention of digital devices, individuals who were alone and experiencing negative emotions had the option of reaching out to others through landline telephone, which had specific constraints (e.g., the intended target had to be near their phone) and customs (e.g., not to call during evening hours). This lack of immediate support was essentially solved by real-time instant messaging. Customs of availability have also eroded such that young adults are available for longer stretches of the day—and night—through their digital devices, which they tend to keep close by (Cheever, Rosen, Carrier, & Chavez, 2014; Steeves, 2014). The on-demand benefits of digital support were expected to be more apparent when participants were alone—addressing lapses in the availability of in-person support. However, the receipt and perceived efficacy of digital support did not vary as a function of participants' social surroundings. Alone or not, digital natives seem to be taking advantage of the immediacy and ubiquitous availability of digital support.

Digital Emotional Support and Trait Social Avoidance

Even when in-person support is available, some individuals experience barriers to realizing its benefits. Those

higher in social avoidance may avoid social encounters (Elliot et al., 2006) despite their desire for social connection (Barry et al., 2013; Coplan & Rubin, 2010). For such individuals, digital devices may represent a safe option to receive support from others without the pressures of in-person contact. Individuals higher in social avoidance were thus expected to receive more digital support than those lower in social avoidance. However, they actually received less digital and in-person support, corroborating their anxiety over social interactions in general (Elliot et al., 2006). Moreover, the perceived efficacy of digital support did not vary as a function of participants' trait social avoidance. This, similar to participants' use of digital support regardless of their social surroundings, suggests that relying on digital devices for emotional support is relatively normative among digital natives.

In-Person Emotional Support

In-person support was received less when participants were initially alone, meaning they did not tend to seek out in-person support when it was not immediately available at the time of their negative emotion. Although largely expected, this context-sensitive receipt of in-person support confirms that the present study's contextual moderator of social surroundings (i.e., whether participants were alone or with others) was meaningfully reflected in participants' responses. This lends further credence to the notion that participants were considering their social surroundings when they counterintuitively reported digital support in the presence of close others.

Limitations and Future Directions

Several limitations of the present study and avenues for further inquiry should be noted and addressed to advance this burgeoning area of digital research. First, this study simply asked participants how much support they received; although meant to assess quantity, this approach may have partially conflated quantity with quality. To further understand when and why young adults opt for digital support in the presence of others, future studies should isolate the quality of support received, as well as participants' relationship quality with available in-person supports. Second and relatedly, this study focused on the benefits of digital support and thus conceptualized it as a positive interpersonal mechanism; however, in doing so, it neglected the possibility of negative (e.g., dismissive, unhelpful, hostile) support (see Bodenmann, 2005). Future assessments should include the entire spectrum of emotional support quality, from negative to positive. Third, in an effort to maintain a broad focus on a range of emotional scenarios and accompanying supports, this study did not delineate types of digital supports and negative emotions. Future studies may wish to

consider the relative efficacy of digital support through texting, calling, video calling, social media, and other platforms, and effects on distinct negative emotions, which tend to prime different goals and needs (Raghunathan et al., 2006). Fourth, although gender was not focal to this study, it was controlled for because previous studies have documented gender differences in emotion regulation (e.g., Nolen-Hoeksema & Aldao, 2011). Moderation by gender was not considered because the sample was predominantly female, leaving the male group underpowered. Future studies should examine the extent to which digital and in-person support use and efficacy differ by gender. Finally, this study focused on young adults, who are among the top digital users and are considered "digital natives" having grown up completely in the digital age (Prensky, 2009). Findings may not be generalizable to older cohorts, who may be less amenable to the emotional benefits of digital devices per se. Regardless of age, the extent to which individuals utilize and consequently benefit from digital support likely depends on their comfort level with technology. Also, emotions tend to be more volatile and social stress tends to be higher in adolescence and young adulthood (e.g., Lougheed et al., 2016), which may have partly contributed to elevated reports of support for this particular sample.

Digital Emotional Support and the COVID-19 Pandemic

At the time of writing this report, an unprecedented amount of people around the world are under some form of social distancing as a result of the COVID-19 coronavirus pandemic. People are in a heightened state of distress and isolation. Digital devices are suddenly more than just another tool to remain socially connected; they are the main tool in place of in-person interactions. According to a recent poll of 11,537 American adults (aged 18–65 + with heavier sampling of 30–65+) during the pandemic, most (73%) believe that digital interactions are not as effective as "the real thing" (Pew Research Center, 2020). To the contrary, the present results suggest that digital support may be an effective surrogate for in-person support. Prevailing biases against digital interactions may be depriving some of an accessible and successful regulatory tool in a time of crisis. However, although promising and pertinent to the COVID-19 era, it is important to recognize that the present findings reflect prepandemic circumstances. The efficacy of digital support has not been tested under the intense emotions and social constraints of the current pandemic. The COVID-19 pandemic is also having specific negative effects on young adults, including educational disruptions and questionable employment prospects on the horizon. It is hopeful that, in line with the present findings, young adults' digital inclinations may be serving them well as they con-

nect to others and manage their well-being during the COVID-19 crisis.

Conclusions

In sum, this study assessed the receipt and efficacy of digital versus in-person emotional support across scores of young adults and thousands of naturally unfolding emotional events. Although the benefits of digital support were expected to vary as a function of participants' social surroundings and trait levels of social avoidance, they did not (with the exception of those higher in social avoidance receiving less digital [and in-person] support). Even in the presence of close others, young adults received and benefited from digital support. To this point, "texting the one you love" may be an effective way to manage negative emotions when "you don't love the one you're with." Digital support was also perceived to be just as effective as in-person support for facilitating the regulation of intense negative emotions. Overall, digital natives appear to be routinely and successfully employing digital devices as gateways to emotional support. For this generation, transcending the time and space limitations of in-person support to connect with others digitally may soon become the normative way to secure emotional support, if it is not already.

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