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Short Communication

Video chat usage and the Big Five in women during the COVID-19 pandemic

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ABSTRACT

As the COVID-19 pandemic has led to an exchange of face-to-face interactions for virtual meetings across many circumstances, research is needed to understand how individuals differentially respond to the increase in video chatting. The current study evaluated how the Big Five traits were associated with video chat usage, such as use of video chat services prior to and following the beginning of the pandemic, contexts in which participants used these services (i.e. social, family, work/school), and whether people engaged in appearance comparison when video chatting. Participants were recruited through Prolific and responded to a cross-sectional online survey ($n = 438$; $M_{age} = 31.3$; 100% women) assessing video chat usage and the Big Five personality traits. Higher extraversion was associated with greater video chat usage prior to and following the beginning of the pandemic, while neuroticism predicted more frequent video chat appearance comparisons when accounting for age and the other Big Five traits. Findings are discussed regarding the implications of these associations, as well as future research opportunities to extend current findings.

1. Introduction

In response to the COVID-19 pandemic and governmental mandates regarding social distancing, many physical meeting spaces, such as business and schools, are closed (Mervosh et al., 2020). These disruptions have forced many to turn to virtual meetings to maintain productivity and social connections. As such, it is important to consider how people differentially respond to this changing social climate, and perhaps no Big Five trait is more likely to predict how people change than extraversion. Sociability and gregariousness are innate to extraversion (John et al., 2008), and those higher in extraversion have reported greater concerns for loneliness during the pandemic (Aschwanden et al., 2020). Accordingly, extraversion may be positively associated with daily video chat usage overall and a greater increase in video chat usage following the beginning of the pandemic.

The other Big Five traits also may play a role, given that all have been associated in some capacity with social well-being (Hill et al., 2012); however, their correlates may be more context-specific. For instance, conscientiousness may play a bigger role when it comes to video chat usage in the work context. Higher conscientiousness is predictive of several positive work outcomes, such as occupational attainment and

career success (Roberts et al., 2007). These positive career outcomes likely stem from the behaviors definitive of conscientiousness, such as working long hours or continuing a task when faced with setbacks (Jackson et al., 2010). Accordingly, those higher in conscientiousness may spend more time video chatting for work, as a new avenue for their industrious activity.

The role of personality though may reach beyond total video chat usage, and also influence how people respond to this new format. Video chatting services also create unique opportunities for appearance comparison. Unlike in-person interactions, video chatting services place a thumbnail of the user's image next to other users on the call, allowing for direct comparison of one's appearance to others their calls. Given that neuroticism is linked to self-consciousness and vulnerability (John et al., 2008), users higher on this trait may be more susceptible to appearance concerns. Indeed, higher neuroticism predicts greater comparison to others in-person and online (Chow & Wan, 2017; VanderZee et al., 1996). However, work is needed to understand comparison tendencies in video chat contexts, in order to understand whether neuroticism leads to greater susceptibility to self-image concerns in this now oft-required context.

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1.1. Current study

The current study explored the associations between the Big Five personality traits and four video chat outcomes of interest: self-reported time spent video chatting before and after the start of the COVID-19 pandemic, use in certain contexts (social, family, work/school), time spent looking at oneself on screen when using it, and video chatting appearance comparison. The Big Five literature has led to four main hypotheses:

- 1) Extraversion will be positively associated with time spent video chatting each day.
- 2) Extraversion will be positively associated with increase in time spent video chatting prior to and following the beginning of the pandemic.
- 3) Conscientiousness will be positively associated with time spent video chatting for work.
- 4) Neuroticism will be positively associated with video chatting appearance comparison.

2. Methods

2.1. Participants and procedures

Participants ($n = 468$) were recruited through Prolific. Data were collected exclusively for self-identified females as part of a larger, cross-sectional study investigating women’s usage of video chatting services (Pfund et al., 2020). Other inclusion criteria were that participants must be a minimum of 18 years of age and reside in the United States. Participants were excluded from the data analyses if they exited out of the survey before completion ($n = 5$), failed the attention check ($n = 19$), reported more than 24 hours of daily video chatting ($n = 2$), or inaccurately responded to other write-in questions ($n = 4$). Following these exclusions, 438 participants remained; 434 self-identified as female and four as transgender female. Ages ranged from 18 to 70 ($M = 31.3$, $SD = 12.71$). For race/ethnicity, 11.3% identified as African American/Black, 21.7% as Asian/Asian-American, 52.2% as European-American/White, 9.9% as Latinx-American/Hispanic, and 2.3% as Middle Eastern. All participants responded to a questionnaire about their daily video chat usage, certain video chat behaviors, and their personalities. Hypotheses and planned analyses were pre-registered on OSF, as well as greater details about the current study: <https://osf.io/fp3ba>.

2.2. Measures

2.2.1. Video chat usage

Participants reported the total number of hours they spent video chatting prior to and following the beginning of the COVID-19 pandemic in four contexts: social, romantic/dating, family, and work/school. A sum of prior- and post- video chat usage was created across contexts. Participants also reported the percentage of time they spent looking at themselves while video chatting.

2.2.2. Video chat appearance comparison

Video chat appearance comparison was assessed by the modified three item Physical Appearance Comparison Scale (Thompson et al., 1991), with video chat modifications made based on Fardouly and Vartanian’s (2015) social media modifications. Participants responded to items like, “When video chatting, I compare my physical appearance to the appearance of others,” on a scale of 1 (never) to 5 (always).

2.2.3. Big Five traits

The Big Five personality traits were assessed using the 20-item mini-IPIP (Donnellan et al., 2006). Participants responded how well each item described them on a scale of 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alphas for these measures can be found in Table 1.

2.3. Analytic plan

All analyses were conducted using the statistical software program Rstudio (R Core Team, 2019). Correlations were calculated for the Big Five personality traits, age, daily video chat (VC) time total and by context, VC behaviors, and VC appearance comparison. To address each hypothesis, a multiple regression was conducted in which the outcome of interest was regressed onto the centered Big Five personality traits and age. The first multiple regression evaluated total daily VC hours following the beginning of the COVID-19 pandemic. The second evaluated change in VC usage prior to and following the beginning of the COVID-19 pandemic. The third multiple regression evaluated total daily VC hours in the work context. The fourth multiple regression evaluated VC appearance comparison.

Table 1

Descriptive statistics, reliabilities, and correlations for Big Five, daily video chat usage, video chat appearance comparison (comparison), and percentage of time spent Looking at self when video chatting (percent).

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Extraversion														
2. Agreeableness	0.27*													
3. Conscientiousness	0.04	0.04												
4. Neuroticism	-0.07	0.01	-0.30*											
5. Openness	0.14*	0.24*	0.02	-0.02										
6. Age	0.11*	0.08	0.11*	-0.23*	-0.03									
7. Pre-total hours	0.18*	0.06	0.06	0.00	0.06	-0.24*								
8. Post-total hours	0.16*	0.02	-0.04	0.09	0.06	-0.29*	0.49*							
9. Change in hours	0.05	-0.02	-0.09	0.10*	0.03	-0.16*	-0.16*	0.79*						
10. Social hours	0.13*	0.04	-0.12*	0.09*	0.06	-0.24*	0.40*	0.80*	0.62*					
11. Family hours	0.13*	0.02	0.05	-0.05	-0.02	-0.04	0.36*	0.46*	0.26*	0.25*				
12. Work hours	0.12*	-0.05	-0.01	0.07	0.03	-0.25*	0.23*	0.81*	0.75*	0.49*	0.19*			
13. Comparison	-0.04	-0.01	-0.07	0.19*	-0.06	-0.08	-0.05	-0.01	0.03	0.00	-0.10	0.04		
14. Percent	0.09	-0.10	0.01	0.04	-0.09	-0.07	0.09	0.11*	0.05	0.07	0.06	0.13*	0.24*	
α	0.84	0.73	0.74	0.73	0.77								0.87	
Range	1-5	1-5	1-5	1-5	1-5	18-70	0-12	0-19.4	-6.5-17	0-15	0-7	0-15	1-5	0-100
M	2.57	4.01	3.35	3.08	3.89	31.29	1.61	3.07	1.47	1.09	0.54	1.19	2.39	39.02
SD	1.78	1.81	1.04	1.03	1.90	12.71	2.01	3.32	2.93	1.37	0.75	1.64	1.91	25.37

Note. $Ns = 376-438$.

* $p < .05$.

3. Results

3.1. Descriptive statistics and correlations

Descriptive statistics, reliabilities, and correlations for the variables of interest are presented in Table 1. Extraversion was associated with more daily VC in general and more VC socially, for work, and with family, though it was not associated with change in usage.

Agreeableness and openness were not associated with any of the VC variables, while conscientiousness was negatively associated with social VC. Finally, neuroticism was positively associated with change in VC and general VC, as well as greater VC appearance comparison. None of the Big Five traits were associated with percentage of time spent looking at oneself during VC.

3.2. Personality traits and video chat usage

To address each hypothesis, a regression was conducted including all Big Five traits and age (see Table 2). Regarding Hypothesis 1, those who scored higher on extraversion reported more time VC following the beginning of the COVID-19 pandemic. Regarding Hypothesis 2, none of the Big Five traits predicted change in time spent VC following the beginning of the pandemic. Regarding Hypothesis 3, conscientiousness did not predict greater VC in a work context, though extraversion did. Finally, regarding Hypothesis 4, neuroticism predicted greater VC appearance comparison, though the other Big Five traits did not.

4. Discussion

The current study investigated the role that personality may play in the new, increasingly important video chat usage. As predicted, extraversion was positively associated with time spent video chatting, and neuroticism was positively associated with video chat appearance comparison. The increased usage of video chatting following the beginning of the pandemic likely illustrates the efforts of those higher in extraversion to maintain social interactions. The current findings also expand on past research linking neuroticism to appearance comparison during in different contexts (Chow & Wan, 2017; VanderZee et al., 1996). Given that appearance comparison and neuroticism both predict greater appearance concerns and poorer body image (Fardouly et al., 2017; Frederick et al., 2016), future work should consider whether video chat appearance comparison may further exacerbate this association.

Counter to predictions, extraversion was not associated with a greater change in video chat usage from pre- to post-pandemic. This finding may reflect either the universal use of video chat services as the new norm for communication, evidenced by the overall increase in video chat usage reported, or that those higher on extraversion were already employing this method frequently before the pandemic. Finally, conscientiousness did not predict more time spent on work calls, though extraversion did. With past work indicating that higher extraversion is associated with more social and enterprising jobs (Wille & de Fruyt, 2014), people higher on extraversion may have jobs that are more likely to require virtual meetings. Future research should investigate the type of job as a potential moderator of these associations.

The current study is not without limitations. First, the sample was only women, so these findings may not generalize to other genders. Second, the study was cross-sectional and usage both prior to and following the beginning of the pandemic was self-reported. As such, these data cannot speak to the temporal directionality of these associations or to people's self-report accuracy for amount of time spent video chatting. Future research should aim to include a more diverse sample, daily diary methodology, and an objective measurement of video chat usage. However, the current study provides an initial exploration into the associations between the Big Five personality traits and our new norm of communication: video chatting.

Table 2

Big Five personality traits and age predicting total video chatting hours (model 1), change in video chatting hours (model 2), work video chatting hours (model 3), and video chat appearance comparison (model 4).

	Model 1	Model 2	Model 3	Model 4
	b(SE)	b(SE)	b(SE)	b(SE)
Intercept	3.07(0.15)*	1.47(0.14)*	1.19(0.08)*	2.39(0.05)*
Extraversion	0.65(0.15)*	0.24(0.14)	0.29(0.08)*	-0.02 (0.05)
Agreeableness	-0.09(0.22)	-0.16(0.20)	-0.19(0.12)	0.02(0.07)
Conscientiousness	-0.03(0.18)	-0.21(0.16)	0.05(0.09)	-0.02 (0.06)
Neuroticism	0.11(0.18)	0.18(0.17)	0.07(0.10)	0.20(0.06)*
Openness	0.12(0.19)	0.08(0.18)	0.05(0.10)	-0.07 (0.06)
Age	-0.09 (0.01)*	-0.04 (0.01)*	-0.04 (0.01)*	0.00(0.00)

* $p < .05$.

CRedit authorship contribution statement

Gabrielle N. Pfund: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - original draft. **Jennifer Harriger:** Methodology, Writing - review & editing. **Patrick L. Hill:** Conceptualization, Methodology, Investigation, Writing - review & editing.

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