

Role of Personality Traits, Self-Efficacy and Procrastination on Cyberloafing Behavior: A Moderated Mediation Study

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ABSTRACT

The internet has revolutionised the way work is carried out and has contributed significantly to the enhancement of organisations, employees and students. With time, internet usage in organisations and institutes has taken a new turn. One such concern of internet usage is cyberloafing. Cyberloafing has caused an obvious drop in employee and student productivity, and subsequently cost organisation much time and money. Studies have tried to identify factors that influence cyberloafing behaviours; however, have led to few inconclusive arguments. With a total sample size of 315 (females=181 and males=134), the present study aims to understand how self-efficacy mediates and procrastination moderates the relationship between personality traits and cyberloafing behavior. Using a survey research design, the data was collected through online and paper-pencil modes. Pearson's product moment correlations and stepwise regression revealed that personality traits have connection with cyberloafing behavior. Moreover, moderated-mediation analysis showed that self-efficacy does not act as a mediator for personality traits (conscientiousness and extraversion) and cyberloafing. Similarly, procrastination too does not moderate the relation between the two variables. The present study sheds light on existence of cyberloafing at workplace and academics, and emphasises on the importance of understanding the factors influencing cyberloafing.

Keywords: Personality traits; Cyberloafing behavior; Procrastination; Self-efficacy; Extraversion; Conscientiousness

1. INTRODUCTION

The 21st Century has witnessed immense technological advancement, imprinting all aspects of an individual's life. Information technology has transformed the individual's lifestyle and their adoption of technology. One of these technological advancements is the smartphone and the numerous applications that offer quick internet access to social media like WhatsApp, Facebook, Instagram, Twitter, etc. Technological advances contribute to the efficiency and effectiveness of the workplace in many ways, such as increased accessibility to vital data, catalyzing task completion, and enhancing collaboration in numerous ways, including enabling virtual teamwork, especially in the COVID-19 crisis¹.

Rapid advancements in science and technology have had both positive and negative effects on every facet of human life. As a result of these developments, the goals and priorities of employees and students, as well as how they approach their professional and academic

responsibilities, shift. Procrastination and cyberloafing are a few of the concerns that impact academia and business. Cyberloafing is a productivity break that boosts creativity and problem-solving and restores intellectual resources that are depleted during task performance. However, excess cyberloafing may lead to a decrease in work productivity and is detrimental to the organisation. It is claimed that many public and private organisations are enacting regulations to prevent students and employees from engaging in cyberloafing because this situation leads to a wastage of time and causes delays in work².

Procrastination, however, is a delay in completing a task to the point where one is uncomfortable. Some of the traits of a procrastinator include a lack of self-control, obedience, and orderliness. Subsequently, high procrastinators might be seen as scattered, preoccupied, wasteful, and sluggish. It is becoming increasingly apparent that personality traits are more closely associated with Procrastination and cyberloafing than a refusal to work. Internal anxieties, feelings, pressures, hopes, and doubts are the root causes of procrastination. Fear of negative

evaluations, low standards for achievement, and beliefs that outcomes are a result of personal efforts were found to predict procrastination among a sample of college students³. College student's procrastination rates were close to 75 %, and half of them admitted that they struggle with it on a regular basis⁴.

A study stated that people who have a procrastination trait or a tendency to use the internet obsessively are more likely to engage in cyberloafing⁵. Not only personality but also the level of self-efficacy and procrastination may lead an individual to cyberloaf. Self-efficacy is described as a judgment of a person about capacities, limits, and capabilities in playing out specific assignments⁷. A high level of self-efficacy can lead to procrastination, for example, self-efficacy causes people to develop a sense of overconfidence in their abilities and believe that they will be able to finish the given task in less time. Another study found that academic self-efficacy and academic procrastination were negatively correlated and that academic self-control mediates the relationship between academic self-efficacy and academic procrastination completely⁸. More researches are required, particularly in an Indian setting, more researches are required to investigate the procrastination habits, self-efficacy, and personality traits of those who participate in cyberloafing behavior to better understand the problem. The present research was designed to investigate this phenomenon and understand the interaction between the said variables.

2. METHODOLOGY

2.1 Hypotheses

H1: Personality traits, Self-efficacy, procrastination and cyberloafing behaviour will be related.

H2: Personality traits will predict cyber-loafing behaviour through self-efficacy and procrastination.

2.2 Sample

The convenience sampling method was used to select the sample from the Indian population, which ranged in age from 18 to 59 years. Both online and offline methods were used for the survey. The sample consists of 315 participants (M= 25.74 years, S.D = 7.33) of which 133 were males (M = 27. 89 years, SD = 8.68) and 181 were females (M = 24.63 years, SD = 5.56). 60.0 % of participants reside in urban areas, 20.0 % in rural areas, and the remaining 20.0 % participants in semi urban areas.

2.3 Measures

2.3.1 *The Big Five Inventory–2 Short Form (BFI-2-S)*⁹:

It is a 30-item personality traits questionnaire: agreeableness, conscientiousness, openness to experience, extraversion, and emotional stability. It is a Likert-type scale; Disagree strongly (1), Disagree a little (2), Neutral (3), Agree a little (4), Agree strongly (5). For the domain scales, reliability was 0.70–0.82, and for the facet scales it was 0.27–0.76.

2.3.2 *Cyberloafing in Educational Setting (CES)*¹⁰:

It addresses the frequency of Cyberloafing behaviours, rated from never (1) to a great extent(5). It assesses behaviours like shopping, accessing online content, real-time updating, sharing, and gaming/gambling. Cronbach's alpha coefficients were high for the total scale (0.95) and individual factors (ranging from 0.87 to 0.94).

2.3.3 *The General Self-Efficacy Scale(GSE)*¹¹:

Developed by Schwarzer & Jerusalem GSE is a self-report measure of self-efficacy. This questionnaire consisted of 10 items. The total score is calculated by summing all the items. Total score ranges between 10 and 40, with a higher score indicating more self-efficacy. Internal reliability for (GSE) Cronbach's Alpha was between 0.76 and 0.90.

2.3.4 *The General Procrastination Scale*¹²:

The General Procrastination Scale was developed by Lodha *et al.*, consisting of 23 items. The scale measures 4 domains of Procrastination- workplace, academic, medical and civic responsibilities. All items are required to be rated on a 5-point Likert scale ranging from 1 to 5. This scale has reliability of 0.8212.

2.4 Procedure

The participants were briefed about the study. Prior to the data collection, informed consent forms were distributed to participants, stating that they understood and accepted all potential outcomes. The participants were instructed to carefully examine each statement and select the one that best described their circumstances.

2.5 Statistical Analysis

The statistical analysis used in the present study were correlation, stepwise regression and moderated mediation analysis (Model 14) using IBM SPSS version 21. Hayes' PROCESS MACRO software by Andrew Hayes (2013) was also used along with SPSS to aid in the moderated mediation analysis¹⁴.

3. RESULTS

3.1 Correlation Between Personality Traits, Self-Efficacy, Procrastination and Cyberloafing

Correlation analyses was performed to find the relationship between Personality Traits, Self-efficacy, Procrastination and Cyberloafing.

Table 1 shows correlation between research variables. Pearson's Product Moment Correlation was computed to assess the relationship between personality traits (extraversion, agreeableness, conscientiousness, negative emotionality and openness to experience), self-efficacy, procrastination and cyberloafing behaviour. There was a significant negative correlation between the agreeableness and Cyberloafing behavior ($r = -0.164$, $p < 0.01$); conscientiousness and Cyberloafing behavior ($r = -0.220$, $p < 0.01$). There was no significant relationship between extraversion and Cyberloafing ($r = 0.035$

Table 1. Correlation among personality traits, self-efficacy, procrastination and cyberloafing behaviour

Parameters	CY	EX	AG	CONS	NEG	OP	GSE	PRO
CY	-							
EX	0.035	-						
AG	-0.164**	0.101	-					
CONS	-0.220**	0.399**	0.463**	-				
NEG	0.102	-0.192**	-0.111*	-0.283**	-			
OP	-0.106	0.145**	0.339**	0.338**	-0.061	-		
GSE	-0.075	0.113*	0.294**	0.314**	-0.257**	0.334**	-	
PRO	0.393**	-0.318**	-0.261**	-0.504**	0.232**	-0.114*	-0.055	-

*p <0.05; **p <0.01 (2- tailed); CY- Cyberloafing behaviour, GSE- General Self-efficacy; PRO- Procrastination; EX- Extraversion; AG- Agreeableness; CONS- Conscientiousness; NEG- Negative emotionality, OP- Openness to experience.

p>0.01); Openness to experience and Cyberloafing behavior (r= -0.106, p > 0.05) and negative emotionality and Cyberloafing behavior (r=0.102, p > 0.05).

There was a negative correlation between Cyberloafing behaviour and general self-efficacy (r= -0.075 p<0.01); however, statistically no significant relationship was found. On the contrary, there was a significant positive relationship between Cyberloafing behavior and procrastination (r=0.393, p<0.01) but no such correlation was found for procrastination and general self-efficacy (r = -0.055, p<0.05).

On the other hand, significant positive relationship between extraversion and general self-efficacy (r=0.113, p<0.05) was found. Similarly, there was a significant positive relationship between agreeableness and general self-efficacy (r=0.294, p<0.01); conscientiousness and general self-efficacy (r=0.314, p<0.01) and Openness to experience and general self-efficacy (r = 0.334, p<0.01). There is a significant negative relationship between negative emotionality and general self-efficacy (r= -0.257, p<0.01).

Furthermore, significant negative relation was found between extraversion and procrastination (r= -0.318, p<0.01); agreeableness and procrastination (r= -0.261, p<0.01) and Openness to experience and procrastination (r= -0.114, p<0.05); conscientiousness and procrastination (r= -0.504, p<0.01). However, significant positive relation was found between negative emotionality and procrastination (r=0.232, p<0.01).

3.2 Stepwise Regression Analysis of Personality Traits on Cyberloafing Behavior

Stepwise regression was used to determine how personality traits (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness) predict the variation in cyberloafing behaviour.

Table 2 and 3 shows the regression analysis between Personality traits (conscientiousness, extroversion) on Cyberloafing behavior. The result disclosed that conscientiousness explains 4.8 % of the variance in Cyberloafing behavior (R=0.220, R² = 0.048, β = -0.220, and F= 15.917, p<0.01) which is significant predictor for Cyberloafing behavior.

Similarly, Extraversion also have significance among variance of 6.6 % (R= 0.258, R²= 0.066, β= .146 and F= 11.078 p<0.001). The overall significance increased by 18 % was observed in R². Thus, it can be inferred that Conscientiousness and Extraversion are significant predictors of Cyberloafing behavior. In addition, other traits such as Openness to experience, agreeability, and negative emotionality did not influence predictions of Cyberloafing behavior.

Figure 1 shows the direct effect of conscientiousness on the cyberloafing behavior through self-efficacy. It was observed that conscientiousness was not a significant predictor of cyberloafing behaviour (c1= -0.149, p>0.01). The direct effect of the conscientiousness on the self-efficacy showed that conscientiousness was significant predictor of self-efficacy (a1= 0.429, p<0.01). For the direct effect of the self-efficacy on the cyberloafing

Table 2. A Summary of the stepwise regression analysis of personality traits on cyberloafing

Variable entered	R	R square (R ²)	Adjusted R square	F	Sig
Conscientiousness	0.220	0.048	0.45	15.917	0.000*
Extroversion	0.258	0.066	0.60	11.078	0.000*

Dependent variable- Cyberloafing behavior P<0.01*

Table 3. Coefficient of the stepwise regression analysis of personality traits on cyberloafing behavior

Model	B	Std. error	Beta	t	Sig.	95. % confidence interval	
						Lower bound	Upperbound
(constant)	106.968	6.331		16.896	0.000	17.9978	23.949
Conscientiousness	-1.223	0.307	-0.220	-3.990	0.000	0.2850	0.5731
(constant)	96.601	7.577		12.750	0.000	-31.2351	65.526
Conscientiousness	-1.547	0.332	-0.278	-4.664	0.000	-0.8608	0.5625
Extraversion	0.912	0.373	0.146	2.447	0.015	0.4571	1.7952

Note: $p < 0.01^*$

behavior, it was observed that self-efficacy was not a significant predictor ($b_1 = 0.836, p > 0.01$). The direct effect of the procrastination on the cyberloafing behaviour, it was observed that procrastination was significant predictor ($b_2 = 1.218, p < 0.01$). It was found that self-efficacy does not mediate the relation between conscientiousness and cyberloafing behaviour. On the other hand, the direct interaction effect of procrastination and self-efficacy on cyberloafing behavior was not found significant ($b_{3i} = -0.0178, p > 0.01$).

Table 4 shows moderated-mediated results of Conscientiousness on Cyberloafing Behavior, with Self-Efficacy as mediator and Procrastination as moderator. The moderated-mediation analysis revealed that procrastination did not moderate the indirect effect of conscientiousness on cyberloafing behaviour ($a_3b_i = -0.007, 95\% \text{ CI} = -0.023, 0.006$). The PROCESS model generates conditional indirect effects at moderated values corresponding to 16th, 50th and 84th percentiles. The results show that self-efficacy does not mediate the association between conscientiousness

and cyberloafing behaviour with low procrastination ($W_{Low} = -0.029, 95\% \text{ CI} = -0.25, 0.18$), moderate procrastination ($W_{Moderate} = -0.128, 95\% \text{ CI} = -0.41, 0.12$) and high procrastination ($W_{High} = -0.204, 95\% \text{ CI} = -0.6, 0.139$).

Figure 2 shows the effect of extraversion on Cyberloafing behavior through self-efficacy. It was observed that extraversion was a significant predictor of Cyberloafing behaviour ($c_1 = 1.126, p < 0.01$). Further, extraversion was considered as predictor variable and self-efficacy considered as outcome variable. It was observed that extraversion was indeed a significant predictor ($a_1 = 0.1732, p < 0.01$). Later, it was observed that self-efficacy was not a significant predictor of Cyberloafing behavior ($b_1 = 0.434, p > 0.01$). Hence, self-efficacy does not mediate the relation between extraversion and cyberloafing. It was also observed that procrastination was a significant predictor of Cyberloafing behavior ($b_2 = 1.1939, p < 0.01$). In addition, the interaction model of procrastination and self-efficacy on Cyberloafing behavior found no statistically significant relationship ($b_{3i} = -0.012, p > 0.01$).

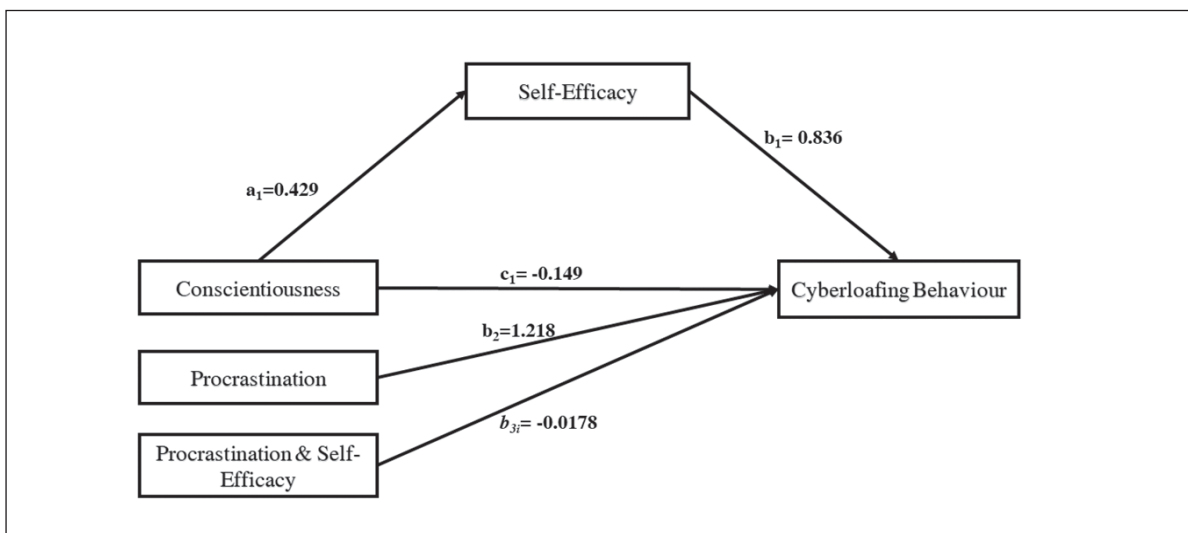


Figure 1. Shows the direct effect of conscientiousness, self-efficacy and procrastination on cyberloafing behavior.

Note: $*p < 0.01$. a_1 = direct effect of conscientiousness on self-efficacy. b_1 = direct effect self-efficacy and cyberloafing behavior. c_1 = direct effect of conscientiousness on cyberloafing behavior. b_2 = direct effect of procrastination on cyberloafing behavior. b_{3i} = direct effect of procrastination and self-efficacy on cyberloafing behavior.

Table 4. Moderated mediation results of conscientiousness

Predictor	Self-efficacy (M)	Cyberloafing behaviour (Y)
	Coeff. (SE)	Coeff. (SE)
Conscientiousness (x)	-0.149 (0.361)*	-0.149 (0.073)
Procrastination (w)	-	1.218 (0.401)*
Self-efficacy (m)	-	0.836 (0.823)
Interaction term		
Procrastination x self-efficacy	-	-0.017 (0.013)
R ²	0.098	0.161
Conditional indirect effects		
Low procrastination	-0.029 (0.108)	-0.25, 0.18
Moderate procrastination	-0.128 (0.132)	-0.41, 0.12
High procrastination	-0.204 (0.187)	-0.6, 0.139
Index moderated mediation	-0.007 (0.0074)	-0.023, 0.006

* p <0.05 level

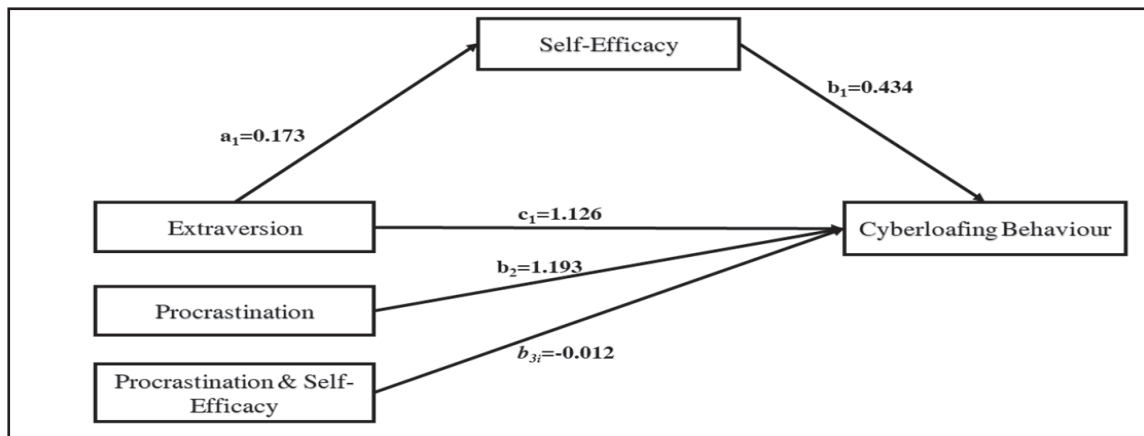


Figure 2. Shows the direct effect of extraversion, self-efficacy, and procrastination on cyberloafing behavior.

Note: *p<0.01. a1= Direct effect of Extraversion on Self-efficacy. b1= Direct effect Self-efficacy and Cyberloafing behavior. c1= Direct effect of Extraversion on Cyberloafing behavior. b2= Direct effect of Procrastination on Cyberloafing behavior. b3i= Direct effect of Procrastination and Self-efficacy on Cyberloafing behavior.

Table 5. Moderated mediation results of extraversion

Predictor	Self-efficacy (M)	Cyberloafing behaviour (Y)
	Coeff. (SE)	Coeff. (SE)
Extraversion (X)	0.173 (0.861)*	1.261 (0.34)*
Procrastination (W)	-	1.193 (0.3943)*
Self-efficacy (M)	-	0.434 (0.783)
Interaction term		
Procrastination X self-efficacy	-	-0.0125 (0.0131)
R ²	0.0128	0.189
Conditional indirect effects		
Low procrastination	-0.034 (0.05)	-0.15, 0.04
Moderate procrastination	-0.0604 (0.06)	-0.203, 0.03
High procrastination	-0.0867 (0.088)	-0.29, 0.05
Index of moderated mediation	-0.002 (0.003)	-0.009, 0.003

* p <0.05 level

Table 5 shows indirect effect of extraversion, self-efficacy, and Cyberloafing behavior through Procrastination. In order to calculate the indirect effect of Extraversion on the Cyberloafing behavior through self-efficacy as mediator and procrastination as moderator, the indirect interaction effect of Extraversion through Procrastination was found to be not statistically significant ($a3bi=-0.002$, 95 % CI= -0.009 , 0.003). The PROCESS model generated conditional indirect effects at 16th, 50th and 84th percentiles justifies the obtained results; self-efficacy does not mediate the association between extraversion and cyberloafing behaviour with low procrastination ($W_{Low}=-0.034$, 95 % CI= -0.15 , 0.04), moderate procrastination ($W_{Moderate}=-0.0604$, 95 % CI= -0.203 , 0.03) and high procrastination ($W_{High}=-0.0867$, 95 % CI= -29 , 0.05).

4. DISCUSSION

The present research intended to explore the relationship between personality traits, self-efficacy procrastination, and cyberloafing behavior.

Empirical studies state that factors like personality traits, self-efficacy, and procrastination influence cyberloafing behaviour¹⁵⁻¹⁸. The results of the present study showed no significant association between cyberloafing behavior and personality traits like extraversion, negative emotionality openness to experience, and self-efficacy. On the contrary, cyberloafing behavior was associated with personality traits (agreeableness and conscientiousness), and procrastination (Table 1).

Procrastination is the inability to remain focused on a particular task and a need for constant sensory stimulation¹⁹. A study linked personality traits and procrastination and found that except conscientiousness, none of the other personality traits like extraversion, neuroticism, openness, and agreeableness is significantly related to procrastination²⁰. Similar results were reported by other studies as well²¹. However, contrary to the previous research, the results of the present study showed a significant negative relation between procrastination and personality traits (extraversion, agreeableness, openness to experience, and conscientiousness); and a significant positive relation was found between procrastination and negative emotionality. The results draw support from previous research, where a statistically significant relation was found between conscientiousness and neuroticism with procrastination²².

Furthermore, a moderated mediation analysis was computed to investigate whether procrastination moderates the relation between self-efficacy and cyberloafing behavior, taking personality traits as predictor variables. The analysis revealed that procrastination does not moderate the relationship between self-efficacy and cyberloafing behavior, with personality traits (conscientiousness and extraversion) as predictor variables. The direct association between personality traits and cyberloafing behavior was not found to be significantly moderated by procrastination, as evidenced by Tables 4 and 5.

It is assumed that the Internet is a useful distraction that encourages procrastination because it is frequently referred to as interesting and entertaining²³. Previous findings have proven that individuals who procrastinate a lot indulge in the Cyberloafing activity²⁴. The result of the present study is in line with previous studies, stating there is a significant relationship between Cyberloafing behavior and procrastination. However, understanding the moderating role of procrastination between cyberloafing behavior and Conscientiousness, the present study found no such role. Previous study states that procrastination is strongly connected with a low level of conscientiousness. So individuals with high level of conscientiousness trait will never procrastinate²⁵. Contrary to the prior studies, the present results show no such moderating effect. Similar inferences are drawn for personality traits and extraversion. The direct interaction between extraversion and cyberloafing behavior was not found significantly moderated by procrastination.

Drawing an inference from previous studies, it is evident that personality traits, self-efficacy, and procrastination do influence cyberloafing behavior. Even though the results of the present study do not reflect the same notion, it too concludes a certain association that exists between these variables. Further researches are required to validate this association, particularly in the Indian setting.

5. CONCLUSION

Since personality traits are one of the influential causes for individuals to cyberloaf during working hours, the current study looked at how these personality traits affected cyberloafing behavior, as well as how Procrastination and Self-Efficacy play a moderating and mediating role, respectively. The study concludes with the existence of a relationship between personality traits (agreeableness, conscientiousness), and procrastination with cyberloafing. The study has substantial implications for comprehending the intricacies of treatments to increase self-efficacy, decrease procrastination, and modify the workplace to deter ineffective internet use by taking individual differences into account. Educational institutes can design more effective programs to reduce the negative impact of cyberloafing, ultimately leading to higher academic achievement in students.

6. LIMITATIONS

The survey design was unable to rule out extraneous variables. Since all the measures used were self-report questionnaires, there is a high chance of subjective bias emerging in the participant responses. Despite the usage of well-validated measures, fatigue may have influenced the responses.

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