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The spillover effect of after-hours electronic communication on nurses' cyberloafing: the mediating role of psychological contract breach

Na Zhang¹, Xiaoyun Liu¹, Jingjing Li^{2*} and Zhen Xu³

Abstract

Background Considerable research has investigated the influencing factors of cyberloafing in the workplace. However, few studies have focused on the antecedents in non-work fields, especially for nurses. According to the effort-reward imbalance theory, this study aims to explore the spillover effect of after-hours electronic communication on nurses' cyberloafing, and the mediating role of psychological contract breach.

Methods A total of 282 nurses completed the online survey. PROCESS macro for SPSS was used to test how after-hour electronic communication affects nurses' cyberloafing.

Results After-hours electronic communication has a significant positive impact on nurses' cyberloafing, and psychological contract breach plays a mediating role in the model.

Background

Cyberloafing, defined as the use of work computers for non-work-related activities during work hours, has become a significant workplace issue. It is associated with decreased productivity, increased errors, and higher turnover rates. Research has shown that cyberloafing is influenced by various factors, including organizational culture, job satisfaction, and work environment. In the healthcare sector, cyberloafing can be particularly detrimental due to the high-stakes nature of the work. Understanding the antecedents of cyberloafing is crucial for developing effective interventions to reduce its prevalence.

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Hypothesis 1 AEC

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Data collection and participants

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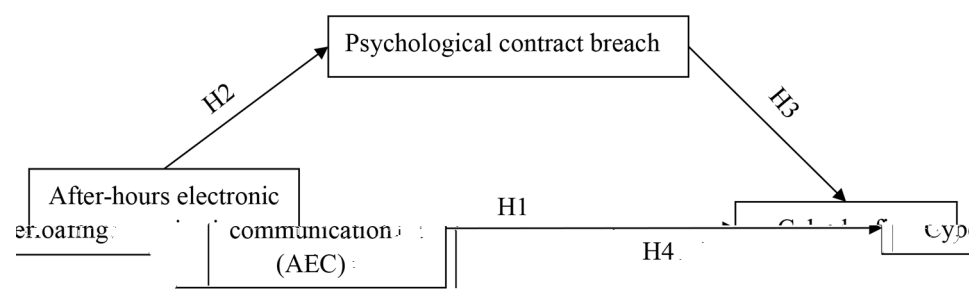


Fig. 1 Research model

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Table 1 Demographic characteristics (n = 282)

Demographics	Classification	Frequency	Percent	Cumulative Percent
Gender	Female	266	94.3	94.3
	Male	16	5.7	100.0
Age (years)	20	11	3.9	3.9
	21–30	190	67.4	71.3
	31–40	60	21.3	92.6
	> 40	21	7.4	100.0
Clinical tenure (years)	5	150	53.2	53.2
	6–10	67	23.8	77.0
	11–15	35	12.4	89.4
	16–20	13	4.6	94.0
	> 20	17	6.0	100.0
Education level	Certificate (technical school)	10	3.5	3.5

Data analysis

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Results

Testing of common method variance

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Table 2 Descriptive statistics and correlation matrix

variables	Mean	SD	1	2	3	4	5	6	7
1. Gender	0.06	0.232							
2. Age (years)	2.32	0.668	-0.103						
3. Clinical tenure (years)	1.87	1.170	-0.096	0.852**					
4. Education level	2.39	0.570	-0.062	0.207**	0.122*				
5. AEC	3.37	0.938	-0.021	0.040	-0.063	0.070	(0.716)		
6. Psychological contract breach	3.60	0.921	0.040	0.078	-0.009	0.148*	0.503**	(0.738)	
7. Cyberloa ng	3.53	0.879	0.027	0.022	-0.107	0.198**	0.572**	0.611**	(0.712)

Note (s): SD=Standard deviation, *p<0.05(two-tailed), **p<0.01(two-tailed). The n of respondents is 282. AEC=Anticipation of Ethical Conduct; PC=Psychological Contract Breach; CY=Cyberloa ng (AVE).

Table 3 Measurement model

Construct	Item	Factor loadings	CR	AE	IF
AEC	AEC1	0.706	0.759	0.513	1.367
	AEC2	0.728			
	AEC3	0.714			
Psychological contract breach (PC)	PC1	0.803	0.827	0.545	1.375
	PC2	0.716			
	PC3	0.692			
	PC4	0.736			
Cyberloa ng (CY)	CY1	0.771	0.901	0.507	
	CY2	0.768			
	CY3	0.658			
	CY4	0.814			
	CY5	0.743			
	CY6	0.789			
	CY7	0.622			
	CY8	0.586			
	CY9	0.614			

Note (s): AVE=Anticipation of Ethical Conduct; CR, Composite Reliability; AEC, Anticipation of Ethical Conduct; PC, Psychological Contract Breach; CY, Cyberloa ng.

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Correlation analysis

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p<0.01) (r=0.572, p<0.01). -

(r=0.611, p<0.01). -

Measurement model

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Table 4 Comparison of competition models

Models	χ^2	df	χ^2/df	CFI	IFI	TLI	RMSEA
Three-factor model	264.549	101	2.619	0.924	0.925	0.910	0.076
Two-factor model 1	366.576	103	3.559	0.878	0.879	0.858	0.095
Two-factor model 2	434.715	103	4.221	0.847	0.848	0.821	0.107
One-factor model	516.234	104	4.964	0.81	0.811	0.780	0.119

Note (s): Three-factor model = AEC+psychological contract breach+cyberloa ng; two-factor model 1 = AEC+psychological contract breach; two-factor model 2 = AEC+cyberloa ng; one-factor model = AEC, psychological contract breach, cyberloa ng.

Table 5 Mediating effect analysis

variables	Cyberloafing			Psychological contract breach			Cyberloafing		
		SE	<i>p</i>		SE	<i>p</i>		SE	<i>p</i>
Gender	0.155	0.183	0.396	0.237	0.205	0.249	0.062	0.165	0.707
Age	0.227	0.124	0.068	0.152	0.140	0.279	0.168	0.112	0.135
Clinical tenure	-0.176	0.070	0.012	-0.062	0.079	0.433	-0.152	0.063	0.017

$\beta = 0.393$ ($p < 0.001$), H3. AEC
 $\beta = 0.318$ ($p < 0.001$), AEC
 6, AEC
 0.188 (95% CI = 0.119, 0.273).
 95% CI
 AEC
 $\chi^2 = 2.619 < 5$; CFI=0.924 > 0.900; IFI=0.925 > 0.900; LI=0.910 > 0.900; EA=0.076 < 0.080) 63
 IF
 A 3, IF 37.15%
 1.367 1.375 10 64
 H4. F 2
Discussion
Interpreting the findings
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Testing of hypotheses
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 (= 0.506; $p < 0.001$)
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Practical implications

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Theoretical implications

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Limitations and future studies

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Conclusions

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Abbreviations
 AEC After-hours electronic communication

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Author contributions

N. Z. and J. L. participated in study design and manuscript drafting. X. L. and Z. X. participated in data collection and data analysis. All authors reviewed and approved the final manuscript.

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Data Availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The research design was approved by the biomedical research ethics committee of Medical College of Hebei Engineering University. Data privacy and confidentiality were maintained and assured by obtaining subjects' informed consent to participate in the research. All methods were performed in accordance with the relevant guidelines and regulations.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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