Devils of the Digital Era: Tetheredness to Technology and Mental Health in The Context of The Workplace

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Abstract: Advancement in communication technology arrivals has made workplaces easy to connect to their employees in off-working hours. However, there is a growing concern in local and global organizations regarding workplace connectivity in off-working time. After office hours, connectivity to the workforce increases due to the flexible use of technology such as smartphones, laptops, and other portable devices. Previous studies regarding psychological health allude that employees' mental health is at higher risk while using smartphones in off-job hours due to emails, phone calls, texts, and other phone-related engagements. This study examines the relationship between tetheredness to technology on mental health through mediating role of sleep deprivation and moderating role of work to family conflict. We conducted an empirical study which consists of 255 IT Managers who filled out questionnaires to test the hypothesized influences by calculating correlation and regression through process macro. The findings showed that Tetheredness to technology has negatively correlated with mental health, sleep deprivation, and work to family conflicts. This study also discloses moderated mediation; the indirect effect of Tetheredness to technology on mental health through sleep deprivation is stronger for employees who have faced higher work to family conflicts. The results have practical implications for public and private IT-based organizations whose workforce has experienced off-working hours connectivity related to job stressors like 24/7 hours connectivity demands and job insecurity.

**Keywords**: Tetheredness to Technology, Mental Health, Sleep Deprivation, Work to Family Conflict

1. INTRODUCTION

As advancement occurs in information communication technology, such as wireless internet, email, and cell phone, wired the unceasing connectivity with work and, relatedly after the working hours. According to Madden and Jones 2008, the tetheredness to technology after working hours has tripled since 2002; also, in the future, it is predicted to be even higher due to technological innovation like smartphones, lightweight laptops, and tablets (Iqbal, Faheem & Aslam, 2020; Butts, Becker & Boswell, 2015). Face-to-face communication replaced electronic communication and hitched technology in off-working hours (Butts et al., 2015). In this era, the boundaries become blurred in work and family domains, and now employees connect to their workforce in off-working hours, evenings, and weekends (Gadeyne et al., 2018; Derks Mierlo & Schmitz, 2014). Due to these blurring limits, this constant use of smartphones escalates stress, internet addiction, sleep problems, work to family conflicts, and mental illness (Choi & Lim., 2016; Wilson et al., 2017). From an employee health perspective, it has a high prevalence rate; on the other hand, there is substantial and limited research about the inspection of excessive use of technology in off-working hours, counting its development (Billieux et al., 2015).

However, the World Health Organization (2015) and Derks et al. (2014) considered constant connectivity via smartphones as a serious issue regarding public health and emphasizing filling the gap by conducting more researches on specific risk factors related to this course (Harris, 2015). A study by Mahboob and Khan (2016) on mind performance identified that excessive use of technology in off-working hours might decrease employee mindfulness, morale, presenteeism at the workplace that poses significant psychological health concerns for affected employees. IT employees are more prompt to adopt new technologies and technology-assisted job demands, especially in off-working hours, which are imposed on them by their organizations; thus, they are more likely to experience tetheredness to technology consequences than others.

Some studies (Agogo & Hess, 2018) emphasized that a decline in sleep and mental performance is predicted due to connectivity in off-working hours such as evening, night, and weekend (Mazzer, Bauducco, Linton & Boersma, 2018). In addition to connectivity, accessibility and information overload can contribute to various mental health problems, including stress, anxiety, and depression. Mental well-being issues can influence work execution as far as

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an expansion in error rates, poor decision making, loss of inspiration and duty, pressure, and conflicts between co-workers (Harnois & Gabriel, 2000). Work-related stress and poor mental health increases absenteeism and also leads to occupational disability and workers early age retirement. Furthermore, overuse of smartphones in family time may increase family-related stressors (e.g., spousal conflicts and marital dissatisfaction) that may significantly affect psychological well-being (Cappuccio, D'Elia, Strazzullo & Miller, 2010). Thus, this study advanced the literature and theory by investigating the effect of tetheredness to technology in off-working hours on mental health through the mediating role of sleep deprivation and the moderating role of work to family conflict with respect to these relations. This study also have practical implications that advances the management practices by providing awareness about tetheredness to technology detrimental effects that harm employee's personal life. Below we build our theoretical framework on our proposed model in Figure 1.
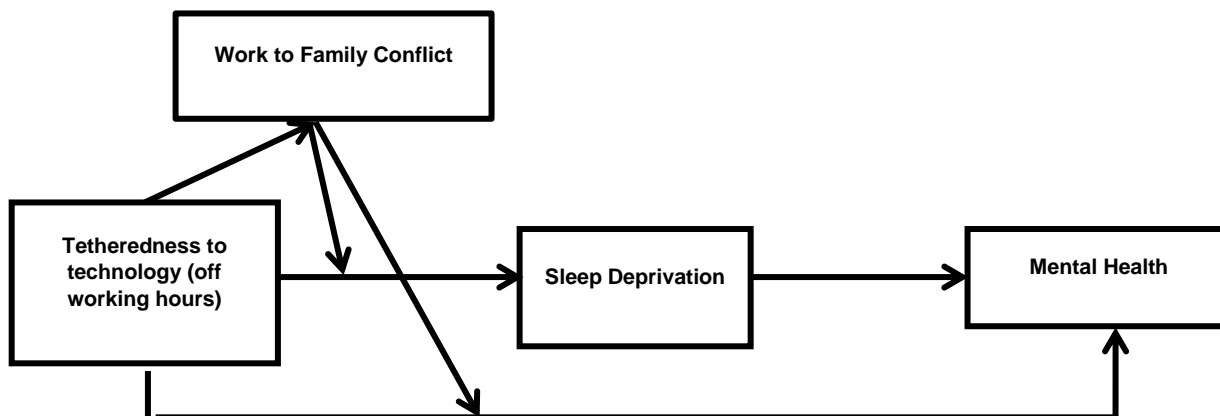
Figure 1: Conceptual Model

2. HYPOTHESIS DEVELOPMENT

2.1. Work to Family Conflicts and Tetheredness to Technology

According to Thomas and Ganster, (1995), the tension between family and work roles can become stressful. Such incompatibility directed the participation in the work role that is made more difficult under participation in the family role. In addition, several studies have found that connectivity during non-work time related to work-non-work conflict (Butts et al., 2015) as well as negative personal consequences such as anger, frustration, emotional stress, burnout, and marital dissatisfaction (Butts et al., 2015). Furthermore, the Information Technology sector faces strain-based conflict because 24/7 workplace connectivity demands overloaded their mind and develops a strong feeling of fatigue in them, which creates stress in their relationships with spouses due to work replacement with family time (Connor, Izadikhah, Abedini & Jackson, 2018). Furthermore, when individuals believe that their work roles interfere with their family roles, they become exhausted and less loyal to the organization (Olsen, 2004). Moreover, this may also increase absenteeism and reduce concentration at the workplace because of higher family stress (Olsen, 2004). Based on COR theory, when an employee is constantly connected to technology, the family resource can deplete in the form of work to family conflict because a one-time employee can serve only one domain effectively (Richardson & Thompson, 2012).

H1: The tetheredness to technology in non-working hours escalate the work to family conflicts

Technology is also considered one of the significant predictors of mental health problems (Scott, Valley & Simecka, 2017). Technological effects are multiple, including affective, cognitive, and behavioral concerns (Flisher, 2010). The technology sector overloaded employees with the fastest response expectations when called in non-work hours (Tarafdar, Gupta & Turel, 2013). As we know, technology is changing almost every facet of our life, evolving modern lifestyle. Its benefits are countless, but as technological advances continue to change the way of living, they may

significantly affect their mental health, such as stress, anxiety, and depression, normal versus abnormal behavior (Scott et al., 2017). Tetheredness to technology in off working hours becomes a global challenge and will rise in the future. The COR model proposed that employees seek to acquire and maintain resources. If resources are lost or threatened, individuals experience distress and mental health issues (Grandey & Cropanzano, 1999). COR theory supported this proposed relationship by providing insights that when employee lose their interpersonal resources due to tetheredness to technology in off working hours, their mental health influenced negatively in the form of depression and stress (Carvalho et al., 2018)

H2: tetheredness to technology in non-working hours negatively influence mental health.

2.2. Mediating Role of Sleep Deprivation

Many researchers argue that advances in technology, including 24/7 access to the internet and social media, have played a substantial role in reducing sleep duration (Matricciani et al., 2017). Sleep deprivation can cause a lot of harmful effects on the employee's personal, psychological, and physical health-related factors. Besides, short term sleep deprivation can negatively affect individuals alertness, mood, attention, and concentration (Wehrens, Hampton, Kerkhofs, & Skene, 2012); while long-term sleep deprivation is associated with chronic diseases (Zhang, Punnett & Nannini, 2017) and mortality (Kripke, Garfinkel, Wingard, Klauber, & Marler; 2002). Thus, tetheredness to technology in off working hours negatively influences sleep duration. According to COR theory, the sleep deprivation relationship and proposed tetheredness to technology at night may result in a loss in employee sleep and lead to a decline in mental energy **(**Green et al., 2018).

H3: sleep deprivation mediates the relationship between tetheredness to technology and mental health

2.3. Moderating Role of Work to Family Conflicts

According to Preacher, Rucker, & Hayes (2007), combining Hypothesis 2–3, this study foresees moderated-mediation effects such as work to family conflict serve as indirect effects of tetheredness to technology on mental health through sleep deprivation. Such moderated- mediation shows that high levels of work to family conflict the pivotal role of sleep deprivation, connecting the technology-based stressor to reduced mental health, ought to be mitigated. Therefore, conservation of resource (COR) theory supports this study that predicts that employees' interpersonal resources increase the chances of depleting mental energies in mental exhaustion, depression, anxiety, and stress such as tetheredness to technology to a disinclination to cognitive performance. Otherwise, employees who cannot disconnect from technology in off working hours are more penetrating these issues caused by excessive use of technology at home, so they are more likely to suffer mental health issues like absentmindedness because they feel psychologically overloaded (Zhang et al., 2017).

H4: Work to family conflicts stronger the negative relationship between tetheredness to technology and mental health through sleep deprivation at the workplace

3. METHOD

A quantitative research approach was used to collect data. Respondents of the study clarified the purpose of the study and guaranteed their complete privacy of responses. Non-probability sampled data was collected by two paper and pencil survey that was administered on-site. First of them measured technology tetheredness, insomnia, the second of measured (depression, anxiety, and stress) and work-family conflict. After completing the survey, respondents requested to place the questionnaire in the pre-paid postage envelop and drop it in the postage drop-box of their organization. Initially 400 middle-level managers who actively engaged in the technology used officially. Three hundred and twenty-seven (327) completed questionnaires were returned. The second questionnaire was distributed only to the 327 participants who returned the 1st survey. The ultimate sample size after removal of unfinished questionnaires and similar the 2nd -time data was two hundred and fifty-five (255), with a response level of

63%. Among the respondents, 70% were men, and 30% were women. The mean of their age was 30 years, 87% had a master's degree. The average experience of working with their organization was three years.

3.1. Measures

3.1.1. Tetheredness to Technology

We used the three-item scale of Veldhoven et al. (2002) and a single item of Boswell & Olson-Buchanan (2007) to measure the technology tetheredness. The items were measured on a 5-point Likert scale (1: never; 5: always).

3.1.2. Work to home conflict

We measure the work to home conflict five-item scale of Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996) and the response on a 1-7 Likert scale from strongly disagree to strongly agree.

3.1.2. Insomnia

Sleep deprivation is measured through 4- item scale of Cole et al. (2011) and measured the responses on a five-point Likert scale.

3.1.2. Mental Health

To measure IT managers' mental health, Dass- 21 scale of Lovibond, S.H. & Lovibond, P.F. (1995) was used and measured the responses on a 4-point Likert scale.

4. RESULTS

Table 1: Means, standard deviations, reliabilities and correlations

	Variables	Means	SD	1	2	3	4	5	6	7	8	9
1	Gender	1.20	0.40									
2	Age	1.63	0.63	-0.04								
3	Organization	1.08	0.28	-0.16	0.16							
4	Experience	1.12	0.32	0.12	.214**	-0.11						
5	Hierarchy	1.76	0.51	.233**	.471**	0.14	.169*					
6	Mean_TT	4.14	0.73	-0.11	.171*	-.452**	0.10	-.196*	(0.91)			
7	Mean_WFC	4.22	1.50	0.05	.312**	.277**	.273**	.239**	-0.15	(0.70)		
8	Mean_IS	2.80	1.05	0.06	0.12	0.11	.304**	-0.11	.357**	.435**	(0.88)	
9	Mean_MH	2.33	0.57	.336**	-0.08	.286**	0.10	-0.12	-.176*	.513**	.401**	(0.89)

Note: TT =Tetheredness to technology; MH = Mental Health; WFC= work to family conflict; IS= Insomnia *p < 0.05; **p < 0.01; ***p < 0.001.

Table 1, displays the means (M), standard deviations (SD), correlations, and internal reliability values of the present study variables. Tetheredness to technology was significant and negatively correlated with mental health (r = -.176, p <0.05) and negatively associated OR connected with work to family conflict (r = -0.15). Sleep deprivation is significant and positively correlated with Mental health (r= 0.041, p<0.01). All the measures taken are reliable such that Cronbach's alpha value is equal to or greater than 0.7 (i.e., the acceptable limit). Cronbach's alpha reliability values for Tetheredness to technology are 0.91, Work-family conflict is 0.70, Insomnia reliability value is 0.88, and mental health the Cronbach's alpha value is 0.89. Such that all measures taken are reliable.

Table 2: Regression Results

Variables	Estimate	SE	T		Lower	Upper	R	RΔ
Intercept	-4.30	1.24	-3.47					
TT→IS	1.32	0.28	4.73	***				
WFC→IS	1.03	0.26	3.99	***			63	40
TT*WFC→IS	-0.16	0.06	-2.68		-0.27	-0.04		
IS→MH	0.17	0.05	3.67	***				
TT→MH	0.19	0.17	1.12					
WFC→MH	0.49	0.15	3.23	***			61	37
TT*WFC→MH	-0.08	0.03	-2.46		-0.15	-0.02		
TT→IS→MH					-0.0452	-0.0124		

Note: *p<0.05; **P<0.01; ***P<0.001

Table 3: Result of Moderated-Mediation Results

	Insomnia					Mental Health				
	Model 1	Model 2	B	Upper	Lower	Model 3	Model 4	β	Upper	Lower
TT	.38**	.32**	.2797***			.36**	.34**			
WFC	.17**	.15*	.2568***			29**	.22**			
TT x WFC		.33**	.0562	-2710	-0.410		.51**	.0332	-.1475	-.0161
IS								0.05***		
TT→IS								.0083	-.0452	-.0124
Tethered to technology	.26**					.32**				
R			.63					.61		

Note: N=255, * P < 0.05, **P < 0.01, ***P < 0.001.

Table 2 contains the regression results of all the direct and indirect relationships. All the hypothesized relationships are significant at P <0.001. Table 3 included direct, mediating, and moderated effects results. Model 1 showed the direct effect of Tetheredness to technology on work to family conflict; Model 2 explains the direct impact of tetheredness to technology on sleep deprivation and the moderating effect of WFC on the direct effect of Tetheredness to technology and insomnia. Model 3 explains the direct impact of insomnia on mental health that how sleep deprivation negatively affects mental health. Model 3 also presents the indirect effect of tetheredness to technology on mental health with the mediating mechanism of insomnia and moderating impact of WFC on Mental health due to the presumed cause of tetheredness to technology. In **hypothesis 1,** we predicted that tetheredness to technology has positively influenced the work to family conflict. Instead, we found that Tetheredness to technology has a negative but insignificant effect on work to family conflict through regression results.

In **hypothesis 2,** we predicted that employees who have highly tetheredness to technology have insomnia at the workplace. In support of this hypothesis, we find a positive relationship between tetheredness to technology and Insomnia in Model 2 (β= .2797, p < 0.001), i.e., an increase in off-job hours use increases sleep deprivation. According to Model 3 findings (β= 0.05, p < 0.001) insomnia affects employees' mental health because it increases the level of stress in them. Furthermore, to assess the presence of insomnia as a mediator in **hypothesis 3**, we apply the well-established bootstrapping method of Preacher et al. (2007), which provides confidence intervals for indirect effects, to avoid the statistical power problems that were generating due to asymmetric and abnormal sampling (MacKinnon, Lockwood, & Williams, 2004). The confidence interval for the indirect effect of tetheredness to technology on mental health through insomnia includes no 0 [-.0452, -.0124], in support of the presence of mediation.

Finally, to tests the moderated meditation, as postulated in hypothesis 4, it relied on Preacher et al., (2007) SPSS "mod-med" macro and its bootstrapping function. Establishing moderated mediation requires determining whether the

indirect effect of Tetheredness to technology on mental health, through insomnia, differs at various levels of the moderators. To check Insomnia results (**Hypothesis 4 and 5**), we calculate interaction terms; Tetheredness to technology ×work to family conflict and Insomnia and Tetheredness to technology ×work to family conflict and Mental health (mentioned table 3 in appendix). Including multiple interaction terms in separate models is a well-established practice because their simultaneous presence in a single model might mark actual moderating effects (e.g. Clercq, Bouckenooghe, Raja, & Matsybor, 2014). Both interaction terms are significant [-.2710,-.0410], [.1475, -.0161] respectively, and there is no zero between the upper and lower boundary.

DISCUSSION AND CONCLUSION

Tetheredness to technology in off working hours is an issue that is highly under discussion, specifically in IT-based organizations, as it overloaded an employee's role through connectivity demanded by the organization in off working hours (Tarafdar, Tu, & Ragu-Nathan, 2010). This new era of technology blurred the boundaries between work and non-work time and makes life imbalance, affecting physical or psychological well-being through connectivity demands (Derks et al, 2014; Lazarus & Cohen, 1977). Therefore, the data gathered from IT-based organizations for this study. The study aims to specifically cater to those who are actively engaging in technology usage regarding their work domain. The data were collected in two waves to avoid the business to achieve the objective of this study (Podaskoff, 2003). The first objective of this study was to investigate the impact of tethered to technology on the mental health of individuals working in IT-based organizations of Pakistan. The results show significance with the previous studies as technological effects comprise different concerns such as emotional, mental, and behavioral (Flisher, 2010).

The second research objective was to observe the effect of technology tetheredness to work to home conflict, and outcomes show insignificance and not consistent with previous studies as the IT sector is facing strain-based conflict because of 24/7 workplace connectivity demands which create conflicts with family (Connor et al., 2018). However, our postulated hypothesis; Tethered to technology could effects the work to the home conflict has detrimental but the insignificant impact, it might be because of small size of sample and its effect and significance level may increase by the increase in the sample size.

The third research objective was to examine the mediating effect of sleep deprivation between tethered to technology and mental health. Results show significant mediation between relations and consistent with the literature. The existence of tethered to technology reduces the quality of sleep. Sleep deprivation negatively affects employees' mental health in IT-based organizations as 24/7 connectivity via the internet on social media networks such as Facebook, Watsapp, Twitter, etc., has played an essential role in the decline in sleep quantity or quality (Matricciani., et al., 2017). Forth research objective shows significant results, as work to family conflicts stronger the relationships between tethered to technology with sleep deprivation and tethered to technology with mental health. Thus, work-to-family conflicts deteriorate the quality of sleep and worsen employees' mental health working in Pakistani IT-based organizations. Results of this objective are consistent with existing studies such as Amstad et al. (2011) stated family conflict also creates severe problems like sleep insufficiency and mental disorders.

Implications of the Study

This study elevates questions against positive outcomes of employees experiencing tetheredness to technology. Our findings showed that tetheredness to technology hours positively related to sleep deprivation, which acts as a sign for employees and is related to poor mental health and job performances. The results of this study have clear the mental health of employees in Pakistan relevant to cognitive-based job demands that have great importance in employee work or personal well-being, and there is a need to take serious steps by organizations against this problem. However, this study provides initial proof that work to the family conflict can strengthen the negative relationship between tetheredness to technology and sleep deprivation. On the other hand, employee's interpersonal and personal resources become deplete to balance their boundaries between work and family life healthly. Therefore, employees who experience depression, stress, sleep, and other mental health-related issues should consider that they face incompatibility between work and family life due to tetheredness to technology (Wayne et al., 2016) and are

responsible for absentmindedness in one domain. So, employees' 24/7 hour connectivity to their workplace may be harmful to their work and personal life. Therefore, they need to seek techniques or ways to recover from the technology-assisted job demands, especially connectivity in off working hours such as mind care activities or leisure time that can refresh their minds and keep away from stress (Schlachter, McDowall, Cropley & Inceoglu, 2018). In addition to some family-supported organizational policies proved helpful for employees to maintain work-family balance and benefited their mental health performance, keeping the corporate environment healthy and innovative.

Future Directions and Limitations

The present research has many strengths containing data collection of Tetheredness to technology on employees' mental health at the workplace. Since the population of the current study consists of 255/ 63% majorities are male. IT managers and statistics generally regress towards the majority. Results probably focus on male responses on tasks; future studies need to confine only female managers who may give different results. Future studies extended towards other IT sector employees, including supervisors, communication officers, and telephonic shift operators' staff and administration with the same model. This research shows the only tetheredness to technology in off working hours through sleep deprivation on employees' mental health at workplaces.

Future research could explore the relationship of coping positive interventions against workplace mental health like transformational leadership support and positive intervention as a supporting effect within the same framework. Positive interventions are helpful to manage sleep disorder family-supporting organizational mental well-being at the workplace. Still, before applying these interventions, there is a need to understand family-supporting corporate policies. In this study, family, supportive specific organizational intervention benefits have not been discussed. Future research needs to discuss these benefits in employees' context. Thus, there is a great need to understand that technology is detrimental or beneficial. Furthermore, future researchers need to clear this ambiguousness by investigating antecedents of tetheredness to technology in off working hours.

The findings of this study are limited to the IT sector of Pakistan, whereas the results could vary in other sectors (Jo & Joo, 2011) such as telecom, education & textile. The findings could also differ because of different targeted populations, the nature of employees, and organizations (Ismail et al, 2010). It might be possible that cultural manifestations developed in the United States have a relatively minor issue for loading in Pakistan. This study was used as a cross-sectional research design to examine the presumed relationships between the variables. Podsakoff et al. (2003) argue that such data may have time variation in it as responses for one variable may affect the quality of response for other variables.

REFERENCES

[1] Agogo, D., & Hess, T. J. (2018). "How does tech make you feel?" a review and examination of negative affective responses to technology use. *European Journal of Information Systems, 27*(5), 570-599.
[2] Amstad, F. T., Meier, L. L., Fasel, U., Elfering, A., & Semmer, N. K. (2011). A meta-analysis of work-family conflict and various outcomes with a special emphasis on cross-domain versus matching-domain relations. *Journal of occupational health psychology, 16*(2), 151.
[3] Billieux, J. (2012). Problematic use of the mobile phone: a literature review and a pathways model. *Current Psychiatry Reviews, 8*(4), 299-307.
[4] Boswell, W. R., & Olson-Buchanan, J. B. (2007). The use of communication technologies after hours: The role of work attitudes and work-life conflict. *Journal of Management, 33*(4), 592-610.
[5] Butts, M. M., Becker, W. J., & Boswell, W. R. (2015). Hot buttons and time sinks: The effects of electronic communication during non-work time on emotions and work-nonwork conflict. *Academy of Management Journal, 58*(3), 763-788.
[6] Cappuccio, F. P., D'Elia, L., Strazzullo, P., & Miller, M. A. (2010). Sleep duration and all-cause mortality: a systematic review and meta-analysis of prospective studies. *Sleep, 33*(5), 585-592.
[7] Carvalho, V. S., Chambel, M. J., Neto, M., and Lopes, S. (2018). Does Work-Family Conflict Mediate the Associations of Job Characteristics With Employees' Mental Health Among Men and Women?. *Frontiers in Psychology*, 9.
[8] Choi, S. B., & Lim, M. S. (2016). Effects of social and technology overload on psychological well-being in young South Korean adults: The mediatory role of social network service addiction. *Computers in Human Behavior, 61*, 245-254.
[9] Cole, D. A., Cai, L., Martin, N. C., Findling, R. L., Youngstrom, E. A., Garber, J., ... & Forehand, R. (2011). Structure and measurement of depression in youths: applying item response theory to clinical data. *Psychological assessment, 23*(4), 819.
[10] De Clercq, D., Bouckenooghe, D., Raja, U., & Matsyborska, G. (2014). Servant leadership and work engagement: The contingency effects of leader-follower social capital. *Human Resource Development Quarterly, 25*(2), 183-212.
[11] Derks, D., Van Mierlo, H., & Schmitz, E. B. (2014). A diary study on work-related smartphone use, psychological detachment, and exhaustion: examining the role of the perceived segmentation norm. *Journal of occupational health psychology, 19*(1), 74.

[12] Flisher, C. (2010). Getting plugged in: an overview of internet addiction. *Journal of paediatrics and child health*, *46*(10), 557-559.

[13] Gadeyne, N., Verbruggen, M., Delanoeije, J., & De Cooman, R. (2018). All wired, all tired? Work-related ICT-use outside work hours and work-to-home conflict: The role of integration preference, integration norms and work demands. *Journal of Vocational Behavior,* 107, 86-99.

[14] Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of vocational behavior*, *54*(2), 350-370.

[15] Harnois, G., & Gabriel, P. (2000). Mental health and work: Impact, issues and good practices.

[16] Harris, K. J., Harris, R. B., Carlson, J. R., & Carlson, D. S. (2015). Resource loss from technology overload and its impact on work-family conflict: Can leaders help? *Computers in Human Behavior, 50*, 411-417.

[17] Iqbal, Z., Faheem, A., & Aslam, S. (2020). Technology Tetheredness and Creative Process Engagement during COVID-19: A Moderated Mediation. *Pakistan Journal of Commerce and Social Sciences, 14*(4), 1043-1064.

[18] Ismail, A., Yao, A., Yeo, E., Lai-Kuan, K., & Soon-Yew, J. (2010). Occupational stress features, emotional intelligence and job satisfaction: An empirical study in private institutions of higher learning. *Negotium*, *6*(16), 5-33.

[19] Jo, S. J., & Joo, B. K. (2011). Knowledge sharing: The influences of learning organization culture, organizational commitment, and organizational citizenship behaviors. *Journal of Leadership & Organizational Studies*, *18*(3), 353-364.

[20] Kripke, D. F., Garfinkel, L., Wingard, D. L., Klauber, M. R., & Marler, M. R. (2002). Mortality is associated with sleep duration and insomnia. *Archives of general psychiatry*, *59*(2), 131-136.

[21] Lazarus, R. S., & Cohen, J. B. (1977). *Environmental stress.* In *Human behavior and environment* (pp. 89-127). Springer, Boston, MA.

[22] Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behavior research and therapy*, *33*(3), 335-343.

[23] MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. Multivariate behavioral research, 39(1), 99-128.

[24] Mahboob, A., & Khan, T. (2016). Technostress and Its Management Techniques: A Literature. *Journal of Human Resource Management, 4*(3), 28-31.

[25] Matricciani, L., Bin, Y. S., Lallukka, T., Kronholm, E., Dumuid, D., Paquet, C., & Olds, T. (2017). Past, present, and future: trends in sleep duration and implications for public health. *Sleep health*, *3*(5), 317-323.

[26] Mazzer, K., Bauducco, S., Linton, S. J., & Boersma, K. (2018). Longitudinal associations between time spent using technology and sleep duration among adolescents. *Journal of adolescence, 66,* 112-119.

[27] Nimrod, G. (2018). Technostress: measuring a new threat to well-being in later life. *Aging & mental health, 22*(8), 1086-1093.

[28] O'Connor, P., Izadikhah, Z., Abedini, S., & Jackson, C. J. (2018). Can deficits in emotional intelligence explain the negative relationship between abandonment schema and marital quality?. *Family Relations*, *67*(4), 510-522.

[29] Olsen, W. (2004). Triangulation in social research: qualitative and quantitative methods can really be mixed. *Developments in sociology*, *20*, 103-118.

[30] Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *885*(879), 10-1037.

[31] Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate behavioral research, 42*(1), 185-227.

[32] Richardson, K. M., & Thompson, C. A. (2012). High tech tethers and work-family conflict: A conservation of resources approach. *Engineering Management Research, 1*(1), 29.

[33] Schlachter, S., McDowall, A., Cropley, M., & Inceoglu, I. (2018). Voluntary Work-related Technology Use during Non-work Time: A Narrative Synthesis of Empirical Research and Research Agenda. *International Journal of Management Reviews, 20*(4), 825-846.

[34] Scott, D. A., Valley, B., & Simecka, B. A. (2017). Mental health concerns in the digital age. *International Journal of Mental Health and Addiction, 15*(3), 604-613.

[35] Tarafdar, M., Gupta, A., & Turel, O. (2013). The dark side of information technology use. *Information Systems Journal*, *23*(3), 269-275.

[36] 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.

[37] Thomas, L. T., & Ganster, D. C. (1995). Impact of family-supportive work variables on work-family conflict and strain: A control perspective. *Journal of applied psychology*, *80*(1), 6.

[38] Veldhoven, M. V., Jonge, J. D., Broersen, S., Kompier, M., & Meijman, T. (2002). Specific relationships between psychosocial job conditions and job-related stress: A three-level analytic approach. *Work & Stress*, *16*(3), 207-228.

[39] Wayne, S. J., Lemmon, G., Hoobler, J. M., Cheung, G. W., & Wilson, M. S. (2017). The ripple effect: A spillover model of the detrimental impact of work-family conflict on job success. *Journal of Organizational Behavior, 38*(6), 876-894.

[40] Wehrens, S. M., Hampton, S. M., Kerkhofs, M., & Skene, D. J. (2012). Mood, alertness, and performance in response to sleep deprivation and recovery sleep in experienced shift workers versus non-shift workers. *Chronobiology International*, *29*(5), 537-548.

[41] Wilson, S. J., Jaremka, L. M., Fagundes, C. P., Andridge, R., Peng, J., Malarkey, W. B., ... & Kiecolt-Glaser, J. K. (2017). Shortened sleep fuels inflammatory responses to marital conflict: Emotion regulation matters. *Psychoneuroendocrinology, 79*, 74-83.

[42] Zhang, Y., Punnett, L., & Nannini, A. (2017). Work-family conflict, sleep, and mental health of nursing assistants working in nursing homes. *Workplace health & safety, 65*(7), 295-303.