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Applying the Circumplex Model to the Examination of Job Stress

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APPLYING THE CIRCUMPLEX MODEL TO THE EXAMINATION OF JOB STRESS

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This study investigated job stress as a dynamic phenomenon and the possibility of job stress spin. The concept of spin is typically associated with affect and examined using the Circumplex Model of Affect. In an effort to better assess job stress, the circumplex model was adapted to reflect the dynamic nature of job stress. One preexisting data set is utilized in this study. In the sample, burnout was collected once using the Oldenberg 15-item Burnout Inventory; experiences of job stress were also collected once using the Stanton measure of work stress. Two items, pumped and excited, were added in the measure of work stress scale. The measure of work stress items was used to calculate job stress spin. A multilevel hierarchical regression was conducted with daily mean job stress and daily job stress spin serving as predictors, controlling for positive and negative affect, trait anger, and job control. Burnout served as the outcome in both steps of the regression. It was hypothesized that daily job stress spin will be associated with incremental variance in associated outcomes, such as burnout, over daily mean job stress. The hypothesized research questions were supported. Daily job stress spin was a significant predictor of burnout and did predict significant variance over daily mean job stress.

I dedicate this thesis to my grandfather, Thomas Andrulonis. His love has carried me through life and continued to do so even after his passing during my first year. Thank you for being with me every step of the way, in life and after.

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Applying the Circumplex Model to the Examination of Job Stress

Stress is ubiquitous; it permeates every life domain. One domain in which stress can occur frequently is work. The amount of job stress an individual experiences will vary; some may experience minimal job stress, others may experience excessive job stress. What's more, some will experience regular, possibly daily, fluctuation in their experience of job stress. Between and within persons daily fluctuation of job stress makes job stress a dynamic phenomenon. I propose that the dynamic nature of job stress can lead to spin, hereafter referred to as job stress spin (JSS). The concept of spin is typically associated with affect and examined using the Circumplex Model of Affect. Adapting the circumplex model to examine the dynamic nature of job stress may provide better utility in examining job stress and its associated outcomes. Therefore, I propose that job stress spin will predict incremental variance in associated outcomes, such as burnout, over daily mean job stress.

Conceptualizing and Understanding Job Stress

The body's reaction to a change that requires a physical, mental, or emotional adjustment or response is called, "stress". The event, context, or demand that leads to change is called a "stressor", (Truxillo, 2016). Nearly two-thirds of employees (65%) (Truxillo, 2016) cite their work as significant source of their stress; however, not everyone responds to stress in the same way. Some individuals may experience stress when they face the smallest challenges while others can handle extreme situations without enduring stress (Truxillo, 2016). There are many models and theories of stress, which serve as explanatory frameworks which help us to understand stress.

According to the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), stress is not necessarily generated from an event, but how an individual interprets an event. The transactional model explains why people can have different levels of stress even if they are experience the same stressful event. The interpretation of the event as stressful is followed by an emotional response, in other words, coping. Just as everyone interprets stressful events differently, everyone copes differently as well. For the Transactional Model of Stress and Coping, it is important to understand that stress is a process and the cognitive, affective, and coping factors must be understood as well to truly understand stress (Lazarus, 1999).

The Cybernetic Theory of Stress suggests that short-term dynamics (i.e., processes that develop within a workday) fluctuate within longer-term dynamics (i.e., strain reactions); Edwards, 1992). In other words, the cybernetic approach suggests that stress is a dynamic phenomenon, which may be associated with physical, psychological, and behavioral strain outcomes. Therefore, the investigation of job stress and associated outcomes may be more appropriately investigated through dynamic model lens, such as the circumplex model.

Outcomes Associated with Job Stress

Job stress is associated with many detrimental individual and organizational outcomes. These outcomes include both psychological and physical outcomes such as burnout, decreased job satisfaction, spillover, decreased sleep quality, and cardiovascular issues (Hege et al., 2019). When employees experience negative individual outcomes associated with job stress, it can lead to decreased productivity, increased absenteeism, and increased turnover, to name a few. Negative outcomes of job stress can lead to expensive issues for organizations.

Burnout is a stress syndrome, stemming from chronic emotional and interpersonal stressors on the job. The syndrome is defined by three dimensions: exhaustion, cynicism, and inefficacy (Maslach et al., 2001). Work-related negative experiences, such as job stress, have an impact on burnout (Bakker et al., 2004). As job stressors reduce individual’s ability to gain control over their work environment, mental, emotional and physical fatigue begin to set in, leading to the prolonged response of burnout (Bakker et al., 2004).

Spillover is the process of linking the work and home domains (Sonenetage & Binnewies. 2013). When employees experience high levels of job stress, that stress can spillover into their lives once they get home from work. It can cause a strain on their relationships with their family and the strain on their family can then cross back over and effect their work attitudes. If their job is causing so much stress to create spillover and interfere with their home life, employees may experience more dissatisfaction with their career and have lower affective commitment (Carlson et al., 2018).

Job stress has a negative effect on employee productivity. Some individuals may start using procrastination as away of avoiding stressful work and deadlines which results in work being done at the last minute and lacking attention to detail or quality control (Murali et al., 2017). Employees might experience a lack of motivation and job satisfaction when they are experience high amounts of job stress as the stress overcomes the enjoyment and interest they may have originally had for their career (Pandey, 2020).

Job stress does not just take a toll on employees' performance or feelings about work, it impacts their physical health as well. Studies show that higher levels of stress are associated with poorer health for individuals (Mohemmend et al., 2019). Health issues causes by job stress account for 23 lost days per person on average (Murali et al. 2017). A 2018 study found that men with cardiometabolic disease had their risk of death significantly increased when they experienced high levels of job stress (Kivimaki et al., 2018). Job stress is also related to impaired sleep (Sonnentag et al., 2016), which can exacerbate negative individual and organizational outcomes associated with job stress.

Understanding and Extending the Circumplex Model of Affect

To adapt the Circumplex model to the examination of job stress, I will first discuss the Circumplex model of Affect. Affect is defined as any experience of feeling or emotion, from a simple to complex sensation of feeling (Beal et al., 2013). Affect exists on a continuum that ranges from positive to negative. Positive affect is usually more predictable than negative affect and is associate with less strain on individuals (Clark et al., 2018). Negative affect is less predictable and the duration of negative affect is more influential on an individual. Negative affect also tends to linger; negative affect from yesterday can lead to more negative affect today (Beal & Ghandour, 2011). Affect spin encompasses the fluctuation that individuals experience with both positive and negative affect (Uy et al., 2017).

Affect spin is investigated using the Circumplex Model of Affect. Affect spin explores how individuals experience changes in affect on a regular basis and how those change impact emotional resources, stress levels, and even decision making. Affect spin can be defined as a variation from one affect state to a quantifiably different affect state in a short period of time (Beal et al., 2013). Affective experiences are categorized along two core dimensions, valence and arousal (Jung et al., 2015). Valence describes the level of pleasure an emotional experience incites while arousal described how activated or deactivated the experience is (Jung et al, 2015). In the Circumplex Model of Affect (presented in Figure 1), pleasure and misery are the two ends of the valence continuum; whereas arousal and sleepiness are the two ends of the arousal continuum (Russel, 1980). Individuals can experience either high affect spin or low affect spin, and the degree to which individuals experience affect spin can vary. For example, an employee may experience affective states of calm, bored, and interested in their position, which would be considered low affect spin; these affective states are relatively similar and do not require a considerable amount of emotional resources when shifting from one affective state to another (Beal et al., 2013). In contrast, an employee who experiences affective states of being relaxed, nervous, excited, and frustrated in one day would likely experience high affect spin (Clark et al., 2018). When one experiences affective states that exist in different quadrants of the Circumplex Model of Affect in a relatively short amount of time (i.e., across a single day and/or across a few days), this requires a considerable amount of emotional resources to regulate feelings when an individual is transitioning through affective state (Clark et al., 2018).

One of the most resource-depleting activities is regulating emotions and, with high affect spin, emotion regulation is occurring frequently (Beal et al., 2013). Affective states that are unanticipated require greater effort to control the emotions and expressions, associated with them. Therefore, high affect spin, in which affective states are unpredictable, will consume more emotional resources for individuals, leading to strain and other negative outcomes.

While affect spin drains emotional resources, it can also impact the reactions, decisions, and judgements of an individual (Uy et al., 2017). Individuals who experience high affect spin are more likely to have more extreme reactions to any affect-inducing event, compared to their low-affect spin counterparts (Uy et al., 2017). An individual's physiological state also plays a role in affect spin. If an individual experiences high affect spin, they may experience adverse effects to their physiological state such has fatigue or high blood pressure. Moreover, if an individual has a sudden change in physiological state, it can cause a change in how they deal with affect changes, making affective events more stressful, and, thus, contributing to high levels of affect spin (Wulvik et al., 2019). Affect spin seeps into an individual's ability to make judgement calls. When an employee is experiencing particularly high affect spin, their ability to make decisions, judgements and take actions can be negatively impacted. What would usually be a logical and strategic decision may become more emotionally based (Uy et al., 2017).

Present Study

In the present study, I will examine job stress as a dynamic phenomenon, and propose that the examination of job stress spin will predict incremental variance over daily mean job stress with burnout. My research questions are as follows:

Research Question 1: Can job stress, as a dynamic phenomenon, be examined through the adaptation of the circumplex model?

Research Question 2: Does job stress spin predict burnout over and above traditional measure of job stress as a dynamic phenomenon?

Currently, there is no existing literature exploring the adaption of the circumplex model to job stress, nor investigating job stress spin. This study will add to the existing literature of job stress as a dynamic phenomenon and possible suggest a better way to measure job stress than the traditional measures.

Methods

Data

Data were collected in 2018 over five working days (Monday through Friday). The sample was made up of working adults who were employed outside of the home for 35 or more hours per week.

Participants

The sample consisted of 112 participants. Most of the participants were white (74.6%) and male (54.3%). Additionally, a majority of these participants had a four-year college degree (52.9%), single and never married (39.9%), and earned an annual income between $25,000 to

$50,000 (31.2%). Most of the participants worked five days a week (89.9%) on a regular daytime schedule. The mean age was 35.79 years (*SD* = 9.61). Participants had an average tenure of 5.94 (*SD* = 4.47) years in their position.

Measures

Burnout was collected at one time using the 15-item Oldenberg Burnout Inventory (Demerouti & Bakker, 2001), approximately 2 weeks following the collection of daily job stress. Burnout is comprised of two dimensions, emotional exhaustion and disengagement. For the purposes of my research, I calculated an overall Burnout score as well as the dimension score for emotional exhaustion. An example item is, “After work, I tend to need more time than in the past in order to relax and feel better.” Responses were assessed along a 5-point Likert-type scale ranging from *strongly disagree* to *strongly agree.* Both overall burnout and emotional exhaustion demonstrated good internal consistency. Cronbach’s α = .903 (overall burnout); Cronbach’s α = .886 (emotional exhaustion).

Job stress was also collected via a daily dairy survey using the 14-tiem Job Stress in General scale (Stanton et al., 2001). In addition, two items, “pumped” and “excited,” were added in order to better get at indicators in each quadrant of the Circumplex model. Responses were assessed via a 4-point forced choice Likert-type scale ranging from *strongly disagree* to *strongly agree*. Cronbach’s α = .929 - .958 across the five days of measurement.

Procedures

Prior to conducting any data analyses, the job stress items were sorted into quadrants, adapted from the Circumplex Model of Affect. Two trained independent coders sorted the items into the quadrant. I served as the deciding opinion in any cases of disagreement among the coders. The items of hectic, demanding, pressured, stressful, and nerve wracking were sorted into the 90 degree to 180-degree quadrant (i.e., negative activation). Pushed, hassled, irritating, and "More stressful than I'd like", where items sorted into the 180 degree to 270-degree quadrant (i.e., negative deactivation). The items of calm, relaxed, comfortable, running smooth, and under control were sorted into the 270 degree to zero-degree quadrant (i.e., positive deactivation). Finally, the items of pumped and excited were sorted into the zero degree to 90-degree quadrant. This will serve as the Circumplex Model of Job Stress (i.e., positive activation). Please see Figure 2.

To analyze the data, the calculations for affect spin were adapted to calculate daily job stress spin. Items were averaged to compute daily positive activating (PA) items, negative activating (NA) items, and negative deactivating (ND) items (Richels et al., 2020). After this, valence and activation scores are calculated for each individual. The equation for valence is (PA) – (NA + ND) while the equation for activation is (PA + NA) – (ND). Once these scores were calculated, pulse and spin was calculated. Calculations produce vectors. The length of each vector was calculated per person and averaged into one pulse indicator for each individual. This pulse indicator represents the amount of variation in the fluctuation among more intense and less intense states of job stress spin.

$$\sqrt{valence^2 + activation^2}$$

Following the calculations for pulse, spin is calculated. Spin is the variability of responses on the grid measured by the angle of each vector (Richels et al., 2020). Widely different angles represent more spin throughout the coordinate system. In order to compute spin, vectors must be transformed into unit vectors.

$$\left(\frac{valence}{\sqrt{valence^2 + activation^2}} \frac{activation}{\sqrt{valence^2 + activation^2}}\right)$$

The mean vector of all states of one individual is calculated by the sum of the vectors, providing R, which is calculated as follows

$$\left(\Sigma\frac{valence}{\sqrt{valence^2 + \ activation^2}}, \Sigma\frac{activation}{\sqrt{valence^2 + activation^2}}\right)$$

The data is then standardize in order to calculate the length of R

$$\frac{\sqrt{\left(\Sigma\frac{valence}{\sqrt{valence^2 + activation^2}}^2\right) + \left(\Sigma\frac{activation}{\sqrt{valence^2 + activation^2}}\right)}}{n}$$

The length of R can range from 0 to 1. Angles that are widely dispersed can cancel each other out, causing R to approach 0. No variability in angles will cause R to equal 1 (Richels et al. 2020). Finally, the last calculation of spin is completed by finding the standard deviation of the deviation for the angles of the unit vector.

$$\sqrt{-2\ln\left(\frac{R}{n}\right)}$$

This final calculation can range from 0 to infinity.

Following the calculation of spin, a multilevel hierarchical regression was conducted, along with a ΔR^2 test to examine whether daily job stress spin predicted significantly more variance in burnout over and above daily mean job stress.

Results

Prior to conducting the multilevel regression analysis, job stress spin was calculated using the equation for affect spin. Job stress spin was calculated within-person on both the daily and the weekly (or between person) level. To calculate job stress spin on the daily level, items categorized as positive activation (PA), negative activation (NA), and negative deactivation (ND) where averaged respectively. These averages were then used as the PA, NA, and ND values in the equations for valence and activation. The calculation for daily job stress spin follows the same steps as the calculation for total job stress spin, with the exception of the summing of vectors. Summing the vectors for each individual was skipped in order to calculate daily job stress spin of participants. Daily mean job stress was calculated for each individuation such that higher daily mean scores indicated more job stress on that day.

Descriptive Analyses

SPSS software was used to compute descriptive analyses. The means, standard deviations, and correlations are reported in Table 1. Composite scores were calculated for each construct. Examination of zero-order bivariate correlations indicated that positive affect, negative affect, trait anger, and job control should be controlled for at the between-person level (Model 2).

Model Testing

Multilevel regression analysis with nested model comparison was conducted in MPlus. In Model 1, control variables were entered at level 2, along with the outcome variable, burnout. At level 1, daily mean job stress was entered, with burnout at level 2 regressed onto daily mean job stress at level 1. Results indicate that daily mean job stress significantly predicted burnout (β = .31, p = .003, CI = .10, .52). The R^2 = .384 for Model 1 indicating that 38.4% of the variance in burnout was explained by daily mean job stress. In Model 2, daily job stress spin was entered at level 1, controlling for daily mean job stress and level 2 predictor variables. Results indicated that daily job stress spin significantly predicted burnout, after accounting for daily mean job stress (β = .27, p = .008, CI = .07, .47). The R^2 = .54 for Model 2 indicating that 54% of the variance in burnout was accounted for by daily mean job stress and daily job stress spin. There was a significant change in R^2 (ΔR^2 = .16). This supports the research question that daily job stress spin does predict incremental variance over daily mean job stress in burnout. The ΔR^2 was significant, $F(1, 105) = 36.36$, $p < .05$. Please see Table 2 for results.

Discussion

The purpose of this study was to examine job stress as a dynamic phenomenon through the adaptation of the Circumplex Model of Affect (Russell, 1980). Additionally, I sought to examine if daily job stress spin predicted associated outcomes of job stress, such has burnout, over and above daily mean job stress. An existing data set utilizing daily dairy methodology was used. This data set collected data each day over a 5-day period. Daily job stress spin significantly predicted incremental variance in burnout over and above daily mean job stress, supporting my research questions. These findings have both theoretical implications that may steer future research.

Theoretical Implications and Future Research

The findings of this study will add to both the current job stress literature as well as add to the literature of the Circumplex Model of Affect (Russel, 1980) and how it may be adapted in the future. The findings of this study support the use of job stress spin as a valid variable of interest in predicting chronic stress outcomes (e.g., burnout). The Circumplex Model of Job Stress should be investigated further. The results of this study suggest daily job stress spin does predict distal outcomes over and above daily mean job stress. This study may also suggest that daily job stress spin has a stronger relationship with more proximal stress outcomes. Future studies should examine the relationship between daily job stress spin and proximal stress outcomes, such as end-of-day emotional exhaustion and detrimental spillover between work and home.

Additionally, the sample for analyses was collected in 2018, before the pandemic and before a significant amount of the workforce transitioned from working in an office to working from home. Future studies may investigate how this transition has impacted the amount of daily job stress spin individuals experience due to home pressures being present during their workday.

Strengths and Limitations

This study has both strengths and limitations. Utilizing a daily dairy study designed over a period of 5 days allowed for a more accurate representation of both daily mean job stress and daily job stress spin as well as the variance in daily experiences. Additionally, I used reliable and valid measures of burnout and job stress (Demerouti & Bakker, 2001; Stanton et al., 2001). The strength of these measurement tools ensures this study was measuring what was intended to be measured.

With strengths come limitations. One limitation is the lack of previous research on the topic. While that does allow this study to fill a needed gap in the literature, it posed a limitation as there are no preexisting scales to measure job stress spin. In the future with more research, a better measure of job stress spin may be found than the measure used in this study. Additionally, the research could have benefited from a larger sample size. Having a smaller sample size does increase the probability of having a type II error. The age of the data may also be considered a limitation in this study. Data were collected in 2018 and because of the major change in how we conduct work due to the pandemic, the sample may not be the most accurate representation of the 2022 population.

Conclusion

The current study examined the relationships between daily job stress spin and burnout. The results supported that job stress is a dynamic phenomenon and does spin daily. Additionally, the results support that daily job stress spin is a predictor of burnout and predicts predict incremental variance in burnout over daily mean job stress.

The results of this study not only contribute to a better understanding of job stress, particularly as a dynamic phenomenon, the results also open the door for more research related to job stress spin. As there are no existing studies related to the adaptation of the Circumplex Model of Affect (Russel, 1980) to reflect job stress spin, this study becomes the first in what could be a robust examination of job stress spin. This study also adds to current studies on Circumplex Model of Affect (Russel, 1980) and how it can be adapted to other stressors.

References

Bakker, A. B., Demterouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, *43*, 83-104. https://doi.org/10.1002/hrm.200004

Beal, D. J. & Ghandour, L. (2011). Stability, change, and the stability of change in daily workplace affect. *Journal of Organizational Behavior*, *32*, 526-546. https://doi.org/10.1002/job.713

Beal, D. J., Trougakos, J. P., Weiss, H. M., & Dalal, R. S. (2013). Affect spin and the emotion regulation process at work. *Journal of Applied Psychology*, *98*, 593-605. https://doi.org/10.1037/a0032559

Carlson, D. S., Thompson, M. J., & Kacmar, K. M. (2018). Double crossed: The spillover and crossover effects of work demands on work outcomes through the family. *Journal of Applied Psychology*, *104(2),* 214-228. http://dx.doi.org/10.1037/apl0000348

Clark, M. A., Robertson, M. M., & Carter, N. T. (2018). You spin me right round: A within-person examination of affect spin and voluntary work behavior. *Journal of Management*, *44*, 3176-3199. https://doi.org/10.1177/0149206316662315

Demerouti, E. & Bakker, A. B. (2001). The Oldenburg Burnout Inventory: A good alternative to measure burnout (and engagement). *Handbook of stress and burnout in health care, 65,* 78.

Edwards, J. (1992). A cybernetic theory of stress, coping, and well-being in orgnizations. *Academy of Management Review, 17(2),* 238 – 274.

Hege, A., Lemke, M. K., Apostolopoulos, Y., & Sonmez, S. (2019). The impact of work organization, job stress, and sleep on the health behaviors and outcomes of U.S. longhaul truck drivers. *Health Education & Behavior*, *46(4)*, 626 – 636. https://doi.org/10.1177/1090198118926232

Jung, H. Park, I. J., & Rie, J. (2015). Future time perspective and career decisions: The moderating effects of affect spin. *Journal of Vocational Behavior*, *89*, 46-55. https://doi.org/10.1016/j.jvb.2015.04.010

Kivimaki, M. et al. (2018). Work stress and risk of death in men and women with and without cardiometabolic disease: a multicohort study. *The Lancet Diabetes and Endocrinology, 6(9)*, 705 – 713. https://doi.org/10.1016/S2213-8587(18)30140-2

Lazarus, R. S. (1999). Hope: An emotion and a vital coping resource against despair. *Social Research*, *66(2)*, 653-678.

Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer publishing company.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*, 397 – 422. https://doi.org/10.1146

Mohammed, D., et al. (2020). Health implications of job-related stress, motivation and satisfaction in higher education faculty and administrators. *Journal of Applied Research in Higher Education*, *12(4)*, 725 – 741. https://doi.org/10.1108/JARHE-04-2018-0056

Murali, S. B., Basit, A., & Hassan, Z. (2017). Impact of job stress on employee performance. *International Journal of Accounting & Business Management*, *5(2)*, 13-33.

Pandey, D. L. (2020). Work stress and employee performance: An assessment of impact of work stress. *International Research Journal of Human Resource and Social Sciences*, *7(5)*, 2394 – 4218.

Richels, K. A., Day, E. A., Jorgensen, A. G., & Huck, J. T. (2020). Keeping calm and carrying on: Relating affect spin and pulse to complex skill acquisition and adaptive performance. *Frontier in Psychology*, *11(377)*. https:// doi: 10.3389/fpsyg.2020.00377

Russel, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*, 1161-1178. https://doi.org/10.1037/h0077714

Stanton, J. M., Balzer, W. K., Smith, P. C., Parra, L. F., & Ironson, G. (2001). A general measure of work stress: The stress in general scale. *Educational and Psychological Measurement*, *61(5)*, 866-888. https://doi.org/10.1177/00131640121971455

Sonnentag, S., Casper, A., & Pinck, A. S. (2016). Job stress and sleep. In J. Barling, C. M. Barnes, E. L. Carleton, & D. T. Wagner (Eds.), Work and sleep: Research insights for the workplace (pp. 77–99). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190217662.003.0005

Sonnentage, S. & Binnewies C. (2013). Daily affect spillover from work to home: Detachment from work and sleep as moderators. *Journal of Vocational Behavior*, *83*(2), 198-208. https://doi.org/10.1016/j.jvb.2013.03.008

Truxillo, D. M., Bauer, T. N., & Erdogan, B. (2016). *Psychology and Work: Perspectives on Industrial and Organizational Psychology.* Routledge.

Uy, M. A., Sun, S., & Foo, M. (2017). Affect spin, entrepreneurs' well-being and venture goal progress: The moderating role of goal orientation. *Journal of Business Venturing*, *32*(4), 443-460. https://doi.org/10.1016/j.jbusvent.2016.12.001

Wulvik, A. S., Dybvik, H., & Steinert, M. (2019). Investigating the relationship between mental state (workload and affect) and physiology in a control room setting (ship bridge simulator). *Cognition, Technology, & Work*, *22*, 95-108. https://doi.org/10.1007/s10111-019-00553-8

Table 1. *Means, Standard Deviations, and Correlations*

Variable	1	2	3	4	5	6	7	8	9	*M*	*SD*
1. Age	—									35.79	9.58
2. Gender	**.17**	—								xxx	xxx
3. Positive Affect	**.10**	.001	—							3.69	0.74
4. Negative Affect	**- .13**	.01	**-.28**	—						1.62	0.61
5. Trait Anger	**-.23**	.02	**-.15**	**.49**	—					1.61	0.56
6. Job Control	.001	-.01	**.10**	-.05	**-.06**	—				2.39	0.94
7. Burnout	-.05	**.09**	**-.37**	**.37**	**.40**	**-.35**	—			2.64	0.79
8. Daily Job Stress	-.01	.01	**-.10**	**.18**	**.21**	**-.25**	**.36**	—		2.17	0.69
9. Daily Job Stress Spin	-.02	**.16**	-.001	.04	-.05	.02	**.08**	**-.82**	—	4.69	1.41

Note: **bold** = significant at p < .05; no means and standard deviations reported for gender (categorical variables).

Table 2. *Model Results*

Models	Variables	Burnout		
		β	SE	R^2
Model 1				
	Positive Affect	-0.27	0.09	
	Negative Affect	0.13	0.09	
	Trait Anger	0.23	0.09	
	Job Control	-0.24*	0.07	
	Daily Job Stress	0.31*	0.11	
				.384*
Model 2				
	Daily Job Stress Spin	0.27*	0.10	
				.542*

Note: $p < .01$*.

Figure 1. *Circumplex Model of Affect*

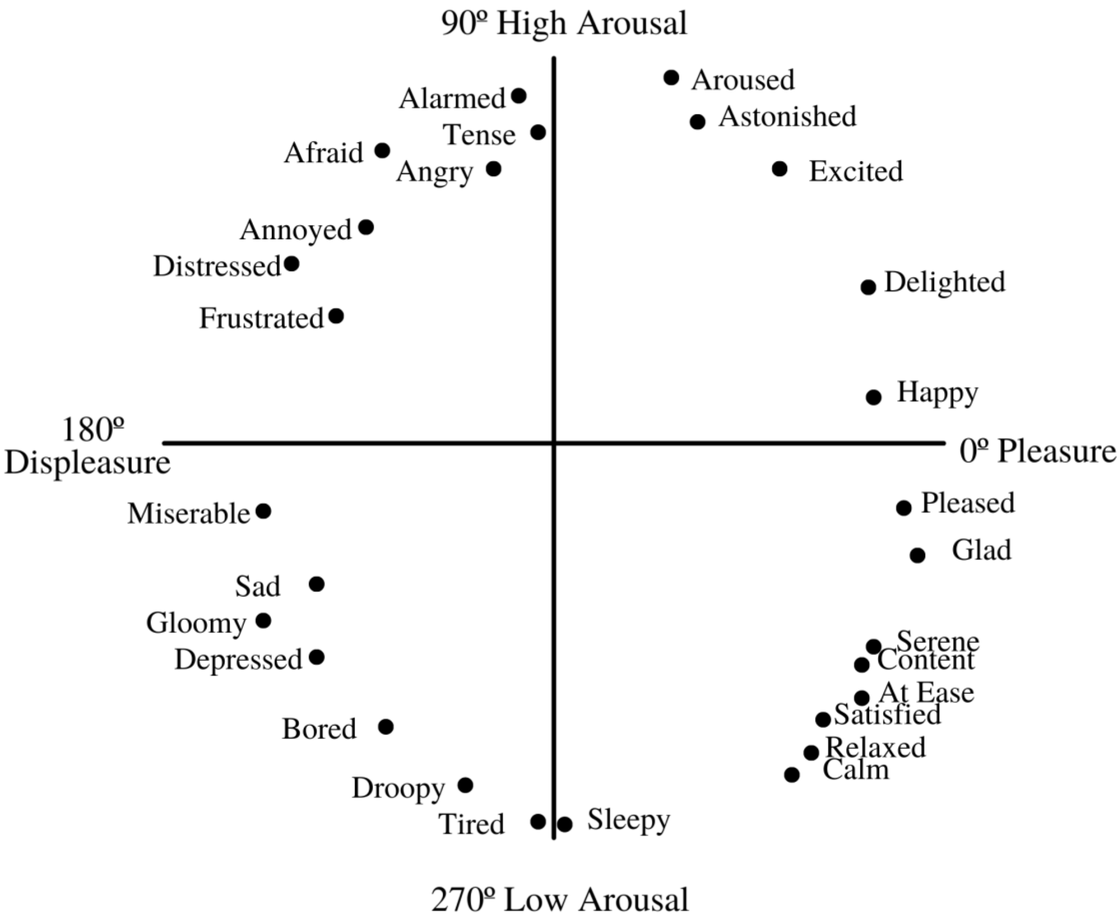

Figure 2. *Circumplex Model of Job Stress*