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Perceived Stress as a Predictor of Attentional Lapses, Memory Impairment and Negative Emotion among University Teachers

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Abstract:

This study was designed to study the relationship among perceived stress, mindfulness, attention related cognitive errors, prospective-retrospective memory and affect among university teachers. The sample consisted of 100 university teachers residing in the campus, in the age range of 25-35 years from two private universities viz. Banasthali University, Rajasthan and K.N. Modi University, Newai. Standardized psychological tests were administered fr the purpose of the study. Results indicate positive correlation among perceived stress, ARCES, prospective-retrospective memory and negative affect. Negative correlation was observed among perceived stress, mindfulness and positive affect. When regression analysis was conducted, perceived stress emerged as a significant predictor of mindfulness, ARCES, prospective-retrospective memory and affect.

Key words: perceived stress, mindfulness, attention related cognitive errors, prospective and retrospective memory

Introduction:

Psychological stress refers to the pressure caused on an individual's mind due to the inability to cope with external demands. Even when the external demands for two persons are similar, the amount of pressure exerted by them may be different. This is because perception of stress is a subjective matter (Cohen, Kamarck & Mermelstein, 1983; Pancheri et al., 2002). A little stress (eustress) is considered good for optimal functioning but as the level of perceived stress increases beyond eustress, the likelihood of negative physical and psychological outcomes is strengthened (Selye, 1985; Levenstein, Ackerman, Kiecolt-Glaser & Dubois, 1999; Segerstrom & Miller, 2004; Andrews & Wilding, 2004).

Attentional errors can be defined as the silly mistakes which we make in accomplishing day-to-day tasks like forgetting/losing things, mixing responses of two or more tasks and absent-mindedness. The second variable of interest in the present study is 'mindfulness' which implies awareness of the present moment encompassing awareness of one's internal as well as external environment. Two other important cognitive variables which have been studied in relation to perceived stress are prospective and retrospective memory- the former referring to remembering the actions/tasks which are to be executed in near future while latter referring to memory about past actions. The paper also takes into consideration the association of perceived stress and affect (as the role of the former in influencing the latter is considered important).

The focus of the present study is to explore the relationship between general stress, affect and minor/day-to-day cognitive impairments including forgetfulness, silly attentional errors, mindfulness and prospective memory errors.

Review of literature:

Relationship of stress with poor physical health (eg., Cohen, Janicki-Deverts, & Miller, 2007) and psychological well-being (eg., Hammen, 2005; Hazel et al., 2008; Melchior et al., 2007) is well established. Effect of stress on cognition has also been studied but the literature exploring the different aspects of this particular domain has been relatively skimpy (Bourne & Yaroush, 2003; Ronnlund, Sundström, Sörman, & Nilsson, 2013). Stressful events cause the secretion of glucocorticoids which bind to the specific areas of brain associated with memory (Lupien, Maheu, Tu, & Schramek, 2007) and prolonged exposure of aforementioned hormones to the brain may lead to structural changes further resulting in cognitive impairments (Lupien et al., 1998). Many studies indicate that severe and prolonged stress produces apparent impairment in cognition; specifically episodic memory (McEwen & Sapolsky, 1995; Vondras et al., 2005). Cognitive impairment due to severe stress has been observed from varied perspectives like the effect of posttraumatic stress disorder on memory, (Bremner et al., 1993; Gil, Calev, Greenberg, Kugelmass, & Lerer, 1990), memory impairments among elderly (Peavy et al. 2009), and so on.

In general, stress is a broad term which encompasses physical/physiological as well as psychological strain. Review of literature suggests comparatively more studies pertaining to effect of physical/physiological stress on cognition as compared to the effect of psychological stress (using both subjective and objective measures). For example, negative impact of heat induced stress (Hocking et al., 2001), cold induced stress (Stillman, Shukitt-Hale, Levy & Lieberman, 1998; Makinen, 2007; Schoofs, Wolf & Smeets, 2009), high-altitude stress (Bonnon, Noel-Jorand, & Therme, 2000) on cognitive performance has been reported in many studies. Research focusing on effect of high cortisol level on human cognition also

yields negative impact of stress induced cortisol on cognition (Kirschbaum et al., 1992).

In case of psychological stress, central focus of research seems to be on specific areas like depression, anxiety, (Hammen, 2005; Hazel et al., 2008; Melchior et al., 2007) posttraumatic stress disorder ((Bremner et al., 1993; Gil et al., 1990) and burnout syndrome (Ohman et al., 2007; Linden et al., 2005). Yet, inconsistency in findings persist either due to the use of varied measures or due to the type or intensity of stress.

Psychological stress triggers release of Glucocorticoids like cortisol. Many studies render an indirect support of the fact that stress impairs cognition by examining the effect of high level of glucocorticoids in animal/human brain. Such studies report that high level of glucocorticoids like cortisol disrupts memory processes including long term potentiation/LTP (McEwen & Sapolsky, 1995; Diamond et al., 1992), hippocampal electrophysiology (Joels & de Kloet, 1992; Rey, Carlier & Soumieu-Mourat, 1989; Beck, List, & Choi, 1994) and causes hippocampal atrophy (Nasrallah, Coffman & Olson, 1989; Lupien et al., 1994,1998).

Recently, there has been a spurt in the studies reporting success of intervention programmes based on mindfulness to enhance the overall psychological well-being of participants. Two intervention programmes viz. Mindfulness based cognitive therapy (MBCT) and Mindfulness based stress reduction intervention (MBSR) are being used to reduce the symptoms of stress, depression, and anxiety (Marchand, 2012), enhancing overall physical health (Rosenzweig, Greeson, Reibel, Green, Jasser & Beasley, 2010, Hartmann et al., 2012) and increasing people's overall quality of life (Fjorback, Arendt, Ørnbøl, Fink, & Walach, 2011). Such interventions are being used for varied populations like nursing (Chiesa & Serretti, 2009; Song & Lindquist, 2014), prostrate and breast cancer patients (Carlson, Speca, Patel, & Goodey, 2003), mental health care-givers

(Shapiro, Brown & Biegel, 2007), psychopathological problems (Marchand, 2012) and so on.

As mentioned earlier, many studies have reported effect of stress on cognition. Link of chronic/extreme psychological stress with general cognitive deficits has also been suggested. However, limited literature is available regarding effect of psychological stress on specific but essential aspects of cognition including silly day-to-day mistakes like completing tasks absent-mindedly (attention related cognitive errors) and forgetfulness for to-be-executed actions as well as past events (prospective and retrospective memory). In this context, Linden et al. (2005) found negative correlation of burnout syndrome/ extreme chronic stress reports with cognitive failure in daily life. In a more recent study, Day, Brasher and Bridger (2012) emphasized on the role of psychological stress in prompting cognitive failure leading to accident proneness.

Stress (generally chronic or emergency) impairs different forms of memory but the data available for certain kinds of memory including but not limited to prospective and retrospective memory are surprisingly skimpy. (Bourne & Yaroush, 2003).

Recently, researchers initiated studying the impact of intense chronic stress on subjective memory problems and found that the former has a detrimental effect on the latter (Öhman et al., 2007; Österberg, Karlson, & Hansen, 2009). Ronnlund et al., (2013) further explored the aforementioned area on a middle-age sample by using both subjective as well as objective measures of memory performance and found detrimental effect of chronic stress on subjective daily memory problems involving prospective and retrospective memory.

The current study also focuses on the relationship between perceived stress and affect. A bulk of literature suggests a link between stress and negative affect (Almeida, & Kessler, 1998, Mroczek & Almeida, 2004). However some researchers also emphasize on the finding that intense stress

may also accompany positive emotions as a result of coping process during stressful events (Folkman, 1997; Folkman & Moskowitz, 2000). Thus, a measure of affect was also used in the current study to examine the relationship among stress and affect in a young adult Indian sample.

Problem:

To examine the relationship among perceived stress, mindfulness, attention-related cognitive errors, prospective-retrospective memory and positive-negative affect.

Objective:

To study the relationship of perceived stress with cognitive (mindfulness, attention-related cognitive errors, prospective, retrospective memory) and affective (positive and negative affect) variables.

Hypotheses:

1. Perceived stress would be significantly related with attention-related cognitive errors, mindfulness, prospective-retrospective memory, positive affect and negative affect.
2. Mindfulness would be significantly related with positive affect, negative affect prospective- retrospective memory, and attention-related cognitive errors.
3. Positive affect would be significantly related with negative affect, prospective- retrospective memory and attention-related cognitive errors.
4. Prospective memory would be significantly related with retrospective, negative affect, and attention-related cognitive errors.

5. Retrospective memory would be significantly related with negative affect, and attention-related cognitive errors.
6. Negative affect would be significantly related with attention-related cognitive errors.

Sample: A sample of 100 university teachers residing in the campus, in the age range of 25-35 years was taken from Banasthali University Rajasthan and K.N. Modi University, Newai. The participants included both males and females (Females; N=70; Males; N=30). Both of these are privately owned institutions renowned for quality education, regular classes and timely short-term assessments.

Variables:

Predictor variable: Perceived Stress (high and low)

Criterion variables: Mindfulness, Prospective memory, Retrospective memory, Positive-Negative Affect and Attention-Related Cognitive Errors.

Measures:

Perceived stress scale: (Cohen et al., 1983). It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. Higher scores indicate a higher level of stress perceived by each individual. Past research reliabilities for different samples range from r = 0.84 to 0.86.

Attention related cognitive errors (ARCES): (Carriere, Cheyne, & Smilek, 2008) measures the frequency with which

one experiences a variety of everyday behavioural and cognitive failures, for which an attention lapse is the most likely cause. The ARCES is a 12-item questionnaire employing a Likert scale of five possible responses, ranging from *never* (1) to *very often* (5). All items are positive and all had good item-total correlations. The internal consistency of ARCES was found to be .88.

Mindful Attention Awareness Scale (MAAS): (Brown and Ryan, 2003) is a 15-item scale designed to assess a core characteristic of dispositional mindfulness. Participants rate the degree to which they function without awareness in daily life. Items are rated on a six-point Likert scale (1 = almost always to 6 = almost never). Authors report that internal consistency alphas range from .82 to .87.

Prospective-Retrospective Memory Scale (PRMQ): The PRMQ (Smith et al., 2000) is a 16-item questionnaire assessing the frequency of memory failures on two main subscales: prospective memory subscale and retrospective memory subscale. Examinees rate the frequency of their memory failures on a 5 point scale: *Never* = 1, *Rarely* = 2, *Sometimes* = 3, *Quite Often* = 4, and *Very Often* = 5. The reliability (Cronbach alpha) is 0.89. The items measuring retrospective memory were excluded, as the purpose of the research was only to assess prospective memory.

Positive and Negative Affect Scale (PANAS): (Watson, Clark, & Tellegen, 1988) is designed to measure positive and negative affect in order to appraise emotional state. The scale consists of 20 words that describe different feelings and emotions. 10 of the words make up a subscale for positive affect, and 10 make up a subscale for negative affect. Participants select on a 5-point scale from 'Very slightly or not at all' to 'Extremely'. The 10 items in the Positive subscale had a calculated reliability alpha of .91 and the 10 items in the Negative subscale calculated .78 reliability.

Results:

Table 1 Median of Perceived Stress scores

Variable	Median
Perceived Stress	20

Table 1 shows the median value of perceived stress scores. The perceived stress scores were divided into two groups: low and high by using median split technique. The median was found to be 20.

Table 2 Mean Scores (Standard deviations) and t-values of low perceived stress and high perceived stress groups on dependent variables

Dependent Variables	Mean		SD			
	M1 Low Perceived Stress Group	M2 High Perceived Stress Group	SD1	SD2	t	Sig.
ARCES	25.14	34.48	7.75	5.79	5.26**	.000
Mindfulness	69.56	58.52	10.98	11.60	3.85**	.000
PANAS p	38.83	34.56	6.01	6.12	2.76**	.008
PANAS n	21. 36	29.19	7.86	8.32	3.81**	.000
Prospective memory	17.11	19.04	6.58	5.92	1.20	.24
Retrospective memory	12.42	14.63	4.04	3.20	2.35**	.02

For prospective and retrospective memory, the lesser the score the better the memory (in both cases)

*p< .05 level; **p<.01 level

When the two groups were compared, the mean scores and SDs for low and high perceived stress group on attention related cognitive errors were 25.14 (7.75) and 34.48 (5.79) respectively, which suggest that individuals experiencing high perceived stress commit more cognitive errors. t-test revealed significant

difference between low and high perceived stress groups in terms of cognitive errors ($t = 5.26$, $p < .01$).

The mean scores and SDs for low and high perceived stress group on mindfulness were 69.56 (10.98) and 58.52 (11.60) respectively, which suggest that the mindfulness of individuals experiencing low perceived stress is slightly better than individuals experiencing high perceived stress. t-test revealed significant difference between low and high perceived stress groups in terms of mindfulness ($t = 3.85$, $p < .01$).

The mean scores and SDs for low and high perceived stress group on positive affect were 38.83 (6.01) and 34.56 (6.12) respectively, which suggest that the positive affect of individuals experiencing low perceived stress is slightly better than individuals experiencing high perceived stress. t-test revealed significant difference between low and high perceived stress groups in terms of positive affect ($t = 2.76$, $p < .01$).

The mean scores and SDs for low and high perceived stress group on negative affect were 21.36 (7.86) and 29.19 (8.32) respectively, which suggest that individuals experiencing high perceived stress have more negative affect. t-test revealed significant difference between low and high perceived stress groups in terms of negative affect ($t = 3.81$, $p < .01$).

The mean scores and SDs for low and high perceived stress group on prospective memory were 17.11 (6.58) and 19.04 (5.92) respectively, which suggest that individuals experiencing low perceived stress have better prospective memory. According to the scoring pattern of prospective-retrospective memory questionnaire (PRMQ), the lesser the score, the better the prospective memory. t-test revealed no significant difference between low and high perceived stress groups in terms of prospective memory ($t = 1.20$, $p > .05$).

The mean scores and SDs for low and high perceived stress group on retrospective memory were 12.42 (4.04) and 14.63 (3.20) respectively, which suggest that individuals experiencing low perceived stress have better prospective

memory. According to the scoring pattern of prospective-retrospective memory questionnaire (PRMQ), the lesser the score, the better the retrospective memory. t-test revealed significant difference between low and high perceived stress groups in terms of retrospective memory ($t = 2.35$, $p < .01$).

Table 3: Correlation between studied variables

	Perceived Stress	ARCES	Mindfulness	positive affect	negative affect	Prospective memory	Retrospective memory
Perceived Stress	1	0.60**	-0.40**	-0.38**	0.52**	0.30*	0.34**
ARCES	0.60**	1	-0.53**	-0.18	0.57**	0.23	0.47**
Mindfulness	-0.40**	-0.53**	1	0.27*	-0.38**	-0.39**	-0.50**
positive affect	-0.38**	-0.18	0.27*	1	-0.24	-0.22	-0.22
negative affect	0.52**	0.57**	-0.38**	-0.24	1	0.11	0.30*
Prospective memory	0.30*	0.60**	-0.39**	-0.22	0.11	1	-0.52**
Retrospective memory	0.34**	0.47**	-0.50**	-0.22	0.30*	-0.52**	1

For prospective and retrospective memory, the lesser the score the better the memory (in both cases)

**correlation significant at 0.01 level (2 tailed)

*correlation significant at 0.05 level (2 tailed)

Table 3 shows correlation coefficients among studied variables. Results indicate significant positive relationship between perceived stress and attention related cognitive errors ($r = 0.60$; $p < .01$), retrospective ($r = 0.34$; $p < .01$) and prospective memory ($r = 0.30$; $p < .05$) and significant negative relationship with mindfulness ($r = -0.53$; $p < .01$) and positive affect ($r = -0.38$; $p < .01$). Thus, the hypothesis 1 is accepted.

Significant positive relationship was found between mindfulness and positive affect ($r = 0.27$; $p < .05$) while significant negative relationship was found between mindfulness and negative affect ($r = -0.38$; $p < .01$), ARCES ($r = -$

0.53; p< .01), prospective memory (r = -0.39; p< .01) and retrospective memory (r = -0.50; p< .01). Thus, the hypothesis 2 is accepted.

Insignificant correlation coefficients were found when positive affect was correlated with negative affect (r = -0.24; p > .05), prospective memory (r = -0.22; p > .05), retrospective memory r = -0.22; p > .05) and ARCES (r = -0.18, p> .05). Thus, the hypothesis 3 is rejected.

Insignificant correlation coefficients were found when prospective memory was correlated with negative affect (r = 0.11, p> .05) and ARCES (r = 0.23 p> .05) while significant negative correlation with retrospective memory (r = -0.52, p< .01), Thus, the hypothesis 4 is partially accepted.

Significant positive correlation was found between retrospective memory and ARCES (r = 0.47, p< .01) and negative affect (r = 0.30; p < .05). Thus, the hypothesis 5 is accepted.

Significant positive correlation was found between negative affect and ARCES (r = 0.57, p< .01) Thus, the hypothesis 6 is accepted.

Table 4 Stepwise Regression Analysis for perceived stress

Variables	R	R^2	Adjusted R	SEM	R square change	ß value	B value	F	Sig
ARCES	0.60	0.36	0.35	6.73	0.36	0.60	0.74	34.43	.000
Mindfulness	0.40	0.16	0.15	11.47	0.16	-0.40	-0.74	11.92	.001
Positive affect	0.38	0.14	0.13	5.98	0.14	-0.38	-0.36	10.14	.002
Negative affect	0.52	0.27	0.26	7.68	0.27	0.52	0.68	22.25	.000
Prospective memory	0.30	0.09	0.07	6.09	0.09	0.30	0.28	5.98	.02
Retrospective mem0ry	0.34	0.12	0.10	3.64	0.12	0.34	0.19	7.95	.01

The above table exhibits the results of multiple regression (stepwise) analysis where criterion variable was ARCES. The

multiple correlation (R) which is dependent on inter-correlations among predictor variable as well as to their correlations with the criterion variables was found to be 0.60. The value of R square change for perceived stress is 0.36, indicating the power of the model changes with the addition or removal of perceived stress from the model. R square of 0.36 indicates that 36% of the variance in ARCES scores is to be accounted for by variable perceived stress (individual contribution). The value of adjusted R was found to be 0.35, which shows that 35% variance in ARCES scores is to be explained by the predictor variable (perceived stress). Thus, perceived stress (high group) is strongly predicting the criterion variable, ARCES. ß value of 0.60 indicates that a change of one standard deviation in perceived stress will result in a change of 0.60 standard deviations in ARCES. The multiple regression equation states that every unit increase in perceived stress led to increase in ARCES scores by its coefficient of 0.74 with the value of constant is 15.18. The value of F is 34.43 ($p < .01$). This indicates that the R square is statistically significant, i.e., the effect of perceived stress on ARCES is significant.

Perusal of table 4 exhibits the results of multiple regression (stepwise) analysis where criterion variable was mindfulness. The multiple correlation (R) was found to be 0.40. The value of R square change for perceived stress is 0.16, indicating the power of the model changes with the addition or removal of perceived stress from the model. R square of 0.16 indicates that 16% of the variance in mindfulness scores is to be accounted for by variable perceived stress (individual contribution). The value of adjusted R was found to be 0.15, which shows that 15% variance in mindfulness scores is to be explained by the predictor variable (perceived stress). Thus, perceived stress (high group) is strongly predicting the criterion variable, mindfulness. ß value of -0.40 indicates that a change of one standard deviation in perceived stress will result in a change (negative) of -0.40 standard deviations in mindfulness.

The multiple regression equation states that every unit increase in perceived stress led to decrease in mindfulness scores by its coefficient of -0.74 with the value of constant is 78.83. The value of F is 11.92 ($p < .01$). This indicates that the R square is statistically significant, i.e., the effect of perceived stress on mindfulness is significant.

Perusal of table 4 showing the results of multiple regression (stepwise) analysis where criterion variable was positive affect. The multiple correlation (R) was found to be 0.38. The value of R square change for perceived stress is 0.14, indicating the power of the model changes with the addition or removal of perceived stress from the model. R square of 0.14 indicates that 14% of the variance in positive affect scores is to be accounted for by variable perceived stress (individual contribution). The value of adjusted R was found to be 0.13, which shows that 13% variance in positive affect scores is to be explained by the predictor variable (perceived stress). Thus, perceived stress (high group) is strongly predicting the criterion variable, positive affect. ß value of -0.38 indicates that a change of one standard deviation in perceived stress will result in a change (negative) of -0.38 standard deviations in positive affect. The multiple regression equation states that every unit increase in perceived stress led to decrease in positive affect scores by its coefficient of -0.36 with the value of constant is 43.74. The value of F is 10.14 ($p < .01$). This indicates that the R square is statistically significant, i.e., the effect of perceived stress on positive affect is significant.

Table 4 exhibits the results of multiple regression (stepwise) analysis where criterion variable was negative affect. The multiple correlation (R) was found to be 0.52. The value of R square change for perceived stress is 0.27, indicating the power of the model changes with the addition or removal of perceived stress from the model. R square of 0.27 indicates that 27% of the variance in negative affect scores is to be accounted for by variable perceived stress (individual contribution). The

value of adjusted R was found to be 0.26, which shows that 26% variance in negative affect scores is to be explained by the predictor variable (perceived stress). Thus, perceived stress (high group) is strongly predicting the criterion variable, negative affect. ß value of 0.52 indicates that a change of one standard deviation in perceived stress will result in a change of 0.52 standard deviations in negative affect. The multiple regression equation states that every unit increase in perceived stress led to increase in negative affect scores by its coefficient of 0.68 with the value of constant is 11.91. The value of F is 22.25 ($p < .01$). This indicates that the R square is statistically significant, i.e., the effect of perceived stress on negative affect is significant.

Table 4 exhibits the results of multiple regression (stepwise) analysis where criterion variable was prospective memory. The multiple correlation (R) was found to be 0.30. The value of R square change for perceived stress is 0.09, indicating the power of the model changes with the addition or removal of perceived stress from the model. R square of 0.09 indicates that 9% of the variance in prospective memory scores is to be accounted for by variable perceived stress (individual contribution). The value of adjusted R was found to be 0.07, which shows that 7% variance in prospective memory scores is to be explained by the predictor variable (perceived stress). Thus, perceived stress (high group) is strongly predicting the criterion variable, prospective memory. ß value of 0.30 indicates that a change of one standard deviation in perceived stress will result in a change of 0.30 standard deviations in prospective memory. The multiple regression equation states that every unit increase in perceived stress led to increase in prospective memory scores by its coefficient of 0.28 with the value of constant is 12.67. The value of F is 5.98 ($p < .05$). This indicates that the R square is statistically significant, i.e., the effect of perceived stress on prospective memory is significant.

Table 4 exhibits the results of multiple regression (stepwise) analysis where criterion variable was retrospective memory. The multiple correlation (R) was found to be 0.34. The value of R square change for perceived stress is 0.12, indicating the power of the model changes with the addition or removal of perceived stress from the model. R square of 0.12 indicates that 12% of the variance in retrospective memory scores is to be accounted for by variable perceived stress (individual contribution). The value of adjusted R was found to be 0.10, which shows that 10% variance in retrospective memory scores is to be explained by the predictor variable (perceived stress). Thus, perceived stress (high group) is strongly predicting the criterion variable, retrospective memory. ß value of 0.34 indicates that a change of one standard deviation in perceived stress will result in a change of 0.34 standard deviations in retrospective memory. The multiple regression equation states that every unit increase in perceived stress led to increase in retrospective memory scores by its coefficient of 0.19 with the value of constant is 9.74. The value of F is 7.95 ($p < .01$). This indicates that the R square is statistically significant, i.e., the effect of perceived stress on retrospective memory is significant.

Discussion

Perceived stress is a reaction to perceived inability to pit oneself against the environmental demands which are taxing or transcending the existing internal as well as external collaterals.

The perspicacity with the stressors has been comprehended by individuals, tend to variegate. People under inexorable stress could be palpable in the form of physical, psychological and emotional symptoms. Lapses in attention divulged at all stratas of endowment. Some are merely inconvenient, such as missing a familiar turn-off on the highway, and some are extremely serious, such as failures of

attention that cause accidents, injury, and loss of life (Robertson, 2003).Thus, leaving an individual in a bungling situation. The ARCES was found to be associated with a more direct measure of propensity to attention lapses (Cheyne, 2006).This decree floats the finding that as perceived stress increases attention-related cognitive errors also increases. Transgression in attention preeminently decreases cognizance of one's own environment. Stress transacts with the mindfulness of human beings, making difficult to pay attention to their surroundings. A study ordained by Montes et al, (2013) lends its indirect support to finding that perceived stress reduces mindfulness. They consummated that meditation reduces perceived stress and augment mindfulness. Stress is an obnoxious state encompassing emotional arousal that people experience and perceive as perfidious and appalled by it. An explosive research in the coliseum of emotions reported that negative emotions, like, grief, hatred, blame, fear, regret, anger, resentment, etc., are seen when a person is under chronic stress (Khodarahimi, Hashim & Mohd-Zaharim, 2012). They also revealed positive correlation between perceived stress and negative emotions. Thereupon, positive emotions are menial to negative emotions, under severe stress, and the individual is guided by temporarily dominating negative emotions. Thus, it provides the fulcrum for the present finding that perceived stress is positively related with negative emotions and negatively with positive emotions.

The frailty in attention may cause disruption in mood state. It may create negative mood state. Thus, attention lapses may have implications for cognitive and affective aspects (Abramson, Metalsky, & Alloy, 1989). Researches have documented the association between ARCES and negative emotions, indicating that negative events elicit more rapid and more prominent responses than neutral or positive events (Carretie, 2001).

The present study found negative relation between prospective and retrospective memory. It is difficult to quote a plausible reason behind such association. So, further research work needs to be conducted to identify factors or mediating factors contributing to it. Retrospective memory was found to be negatively related with ARCES and negative affect. Unsworth, Brewer and Spillers' (2012) justified the present finding. They found a nexus between retrospective memory and ARCES. They concluded that as retrospective memory increases, attention-related cognitive errors decreases and vice-versa. Thus, if cognitive errors increase, it may produce a feeling of loss of meaning in life as it disrupts the everyday routine life and making difficult to carry out daily-routine activities. Thereupon, it may produce negative emotions, like anger, fear, blame, grief, etc.

Results indicated positive relation between mindfulness and positive affect and negative relation with negative affect. Hoffman et al. (2010)'s study findings are consistent with the aforesaid results. They concluded that mindfulness meditation leads to increased positive affect and decreased anxiety and negative affect (Davidson et al., 2003; Erisman & Roemer, 2010; Farb et al., 2010; Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010; Way, Creswell, Eisenberger, & Lieberman, 2010). In a study, Chambers et al. (2008) found high mindfulness, decreased negative affect, fewer depressive symptoms, and less rumination compared to the control group. In addition, the high mindfulness group had significantly better working memory capacity and greater ability to sustain attention during a performance task compared to the control group.

Conclusion

It can be concluded that perceived stress influences minor/day-to-day cognitive impairments including forgetfulness, silly

attentional errors, mindfulness and prospective-retrospective memory errors and affect. This study examined the cognitive impairment as reported subjectively by the participants. Future studies could focus on the objective assessment of cognitive impairments as reported by people experiencing chronic stress also.

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